

# CONNECT MAIN STREET

## VOLUME II: CONCEPTUAL PLANS



SANDAG SMART GROWTH INCENTIVE PROGRAM PLANNING GRANT

# CONNECT ♦ MAIN STREET

Prepared by:



Supported by:









# TABLE OF CONTENTS

1   Concept Introduction	
1.1 Desired Vision & Outcome	1
1.2 Basic Concept Elements	2
2   Concept Overview	
2.1 Title Sheet	3
2.2 Property, ROW Ownership & Amenity Overview	4
3   Overview Plan & Perspectives	
3.1 Design Overview Sheets	5
4   Concept Cross-Sections	
4.1 Section Keymap	7
4.2 Cross-Sections	8
5   Concept Theming	
5.1 Project Theming Diagram	19
5.2 Theme Boards	20
6   Concept Plans	
6.1 Concept Background & Overview	26
6.2 Concept Plans	27
7   Public Improvement Plans	
7.1 Purpose & Future Use	43
7.2 Public Improvement Plans	44
8   Project Phasing	
8.1 Phasing Statement & Map	59
9   Cost Estimates	
9.1 Exceptions, Assumptions, & Overview	60
9.2 Preliminary Cost Estimates	60
9.3 Preliminary Maintenance Costs	65
10   Consultant Recommendations	
10.1 Consultant Recommendations	66
11   City Comments	
11.1 Construction Comments	67
11.2 Furnishing Comments	68
11.3 Construction Standards Comments	68
11.4 Utility Comments	69
11.5 Drainage Comments	70



# 1 | Concept Introduction

## 1.1 Desired Vision & Outcome

### Final Vision Statement

*"CONNECT MAIN STREET will use existing public rights-of way to support and enhance the north/south movement of pedestrians and bicycles. The vision is to create a community corridor that supports active lifestyles and transportation choices by providing a safe, beautiful, and sustainable linear park-way that connects people, places and activities for generations to come.*

### Final Goals

1. Create a transportation and recreational trail that encourages transit, pedestrian and bicycle use
2. Create a sense of place, including artistic, culturally relevant landscape and architectural design
3. Create an improved park setting, which uses landscaping, water features and seating to enhance the natural environment and promote active, healthy lifestyles
4. Improve safety for pedestrians and cyclists, while retaining maintenance and emergency vehicle access
5. Foster greater connections between neighbors, neighborhoods and businesses
6. Improve property values, access to local businesses and attractions
7. This project will be fully implementable

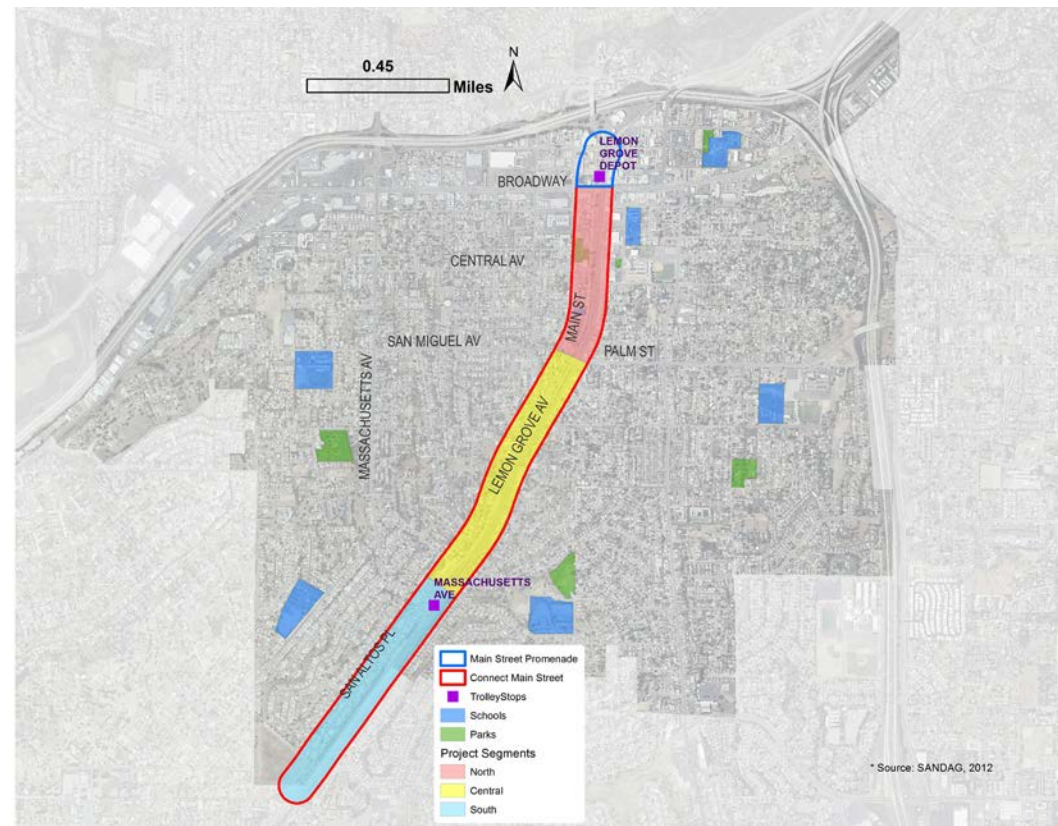
Not many communities have the opportunity to provide a bike and walking facility of more than two miles with less than three roadway crossings. The project location illustrated in **Figure 1-1** shows that the project meets these criteria, running along the MTS light rail line and Main St., in a stretch of property extending from Broadway in the north down to Lemon Grove's southern city limits. Although there are many rails to trails type projects around the country, not many are associated with a light rail system. Fewer still have a roadway with very low traffic volumes that will allow for some minor street closures and the ability to reuse portions of streets for recreational uses. Not many are found in urban areas with a natural creek that leads into a downtown center. All of these factors combine to point out the great potential benefits of this project. But these benefits can not be achieved without some change and without some challenges. The Union Pacific Railroad continues to own small slivers of property along the corridor in several locations. Either the project will need to avoid these areas or agreements will need to be worked out with Union Pacific to obtain an easement, permission or purchase of these properties. Likewise, ownership approval by MTS will be required for certain improvements in their right of way.

Although only three intersection crossings exist, they must be handled in a safe manner that also works well for vehicular traffic. Although some of the minor street segments can be blocked off, the diversion must be reasonable and well defined. The creek-bed has a great deal of potential, but the restoration of the creek needs to balance the drainage functions of the creek with the natural appearance desired. The route also needs to provide interest, education, rest, and activity along its length. The project should not just be about the trail, but what the trail goes through and what you can do and learn along the way.

The improvements need to reflect the community character found along the trail and in the local community. The trail needs to highlight the natural, physical and cultural uniqueness of the area. Additionally, the trail needs to provide a variety of recreational experiences from walking, hiking, running, and biking as well as individual stretching, climbing, jumping and skating opportunities. Parts of the linear park could function as local neighborhood parks with playgrounds and special facilities to engage a wide range of family members. Portions of the park could function more as community wide facilities with features such as dog parks, skate parks and bmx bike courses. Overall, this linear park project should be focused on activity, from walking, running, skating and biking to exercise opportunities promoting strength, fitness, and coordination skills. Above all, amenities and other introduced items should be fun and educational.

There are some very pragmatic things the project must do as well. Drainage improvements are required not only to properly drain the new improvements, but to meet the regional water quality control standards as well. Fencing is critical along the entire pathway system. The edge fencing will be the same as the MTS security fencing for the trolley line. Some conflicts

with existing utilities may also occur, but should be able to be worked out through the franchise agreements that exist between the utility companies and the City of Lemon Grove. The project needs to provide adequate lighting to make it safe at certain locations especially where mixing or crossing walkways occur at intersections. Recreational facilities and intersections should be well lit. The San Altos Place segment may benefit from lighting, if it can be automatically controlled on timers or with sensors. But in other areas, night time use may not be appropriate unless on a bike with lights. If the lighting is too far apart, it will create dark spots. The abrupt change of lighting from very bright to very dark areas can create problems at the interfaces between these lighting areas, since the eye at night does not adjust quickly enough from light back to dark conditions.



**Figure 1-1: Project Corridor Diagram**

Map showing the project are and its relation to the Main St. Promenade project



## 1.2 Basic Concept Elements

The final selected concept was generated from a series of alternatives and public outreach efforts that measured the alternatives against the adopted vision and goals. The plans in this document include cross sections for each segment, design district theming, concept plans, and public improvement plans. Major ideas presented in these plans that may still require future consensus from City Council Members include street closures, proposed amenities (particularly lighting) and possible recreational activities (skate park, pump track, etc.).

### Roadway Change Summary

Main Street closures occur in two places:

- Massachusetts Avenue to San Pasqual Street.
- Intersection of Main Street/Buena Vista Avenue/Mt. Vernon to the driveway entrance of the Lemon Grove Masonic Temple.

Main Street Converted to one way traffic:

- Segment from San Miguel/Olive /Main St. intersection to Burnell Avenue.

Driveway closures:

- Trolley Station lower lot driveway (right turn only) to Massachusetts.

Intersection Closures:

- Main Street on the south side of Broadway.

Existing Main Street closure to remain:

- Partial segment from 100 feet north of the intersection of San Pasqual Street to approximately 980 feet south of the intersection of Beryl Street.

### Trail Concepts (See the concept overview plans)

- **Trail Type 1-** Multi-use recreation trail (south end only) hard surface 12' wide with 6' firm surface side trail (emergency access required)
- **Trail Type 2-** Bike Boulevard using existing 22' minimum hard surface roadway with 6' firm surface side trail using a 4'6" planting buffer, (no emergency access required)
- **Trail Type 3-** Bike Blvd. (north end only) using existing 22' minimum hard surface roadway with 5' -14' hard surface trail on the west and 6' minimum firm surface trail on the east (no emergency access required)
- **Trail Type 4-** Partial Street Closure with a 11' minimum hard surface travel lane southbound next to a 12' multi-use hard surface trail and a 6' wide firm surface side trail (emergency access required)
- **Trail Type 5-** Full Street Closure with a 12' minimum hard surface multi-use trail next to a 6'-8' firm surface side trail (emergency access required)
- **Trail Type 6-** Full Street Closure (north end only) with a 12' minimum unimpeded area for bikes and 20' unimpeded area for emergency access

### Features and Activities:

- Native Gardens (mostly linear edge treatments with interpretive signage)
- Community Gardens (two potential locations)
- Dog Parks (two parks separated to accommodate large and small dogs)
- Skills/Health Park (tot lot, net climb course, rope climb course, par-course stations)
- Sporting Park (Skate Park, BMX pump track, rock climbing structure, yoga platform)
- Education Park (ecosystems, historical, cultural)

The proposed concept also includes street features such as picnic tables, shade structures, seating, trash receptacles, street and pedestrian lighting. Public art is included throughout and takes the form of gateway portals, fence and wall art, historic and natural art pieces, and furnishings. Educational panels, similar to those at the existing Promenade, are also included and focus on mile-and-date-markers, interpretive panels, and kiosks.


Landscape plantings will be drought tolerant and low maintenance with some areas using plant material specific to their corresponding design district to help emphasize the different segments of the creek and to support interpretive elements proposed for the plan. The creek will have invasives removed, be revegetated and stabilized, especially the segment from Massachusetts southward. Trails and multi-use pathways will accommodate emergency vehicles at all street closures while visually appearing to serve only pedestrian or bicycle traffic. Benches will be designed to discourage sleeping. Potential noise-producing activities are strategically located to reduce noise impacts to surrounding residences.

The Broadway and Main Street intersection was of particular interest to local businesses interests. Although the closure of this intersection was approved in concept as a part of a Downtown Village Specific Plan Amendment (Main Street Promenade), the concerns regarding convenient access to the existing businesses south of Broadway on Main Street remain. In response to that concern, the team proposed improvement phasing that would allow for a portion of the improvements to be implemented to accommodate more efficient vehicle parking, enhanced sidewalk areas in front of the businesses and eventually, the relocation of the Main Street bus stop to Broadway. The final phase of the intersection improvements would close the intersection completely and would happen when the redevelopment of the block, consistent with the Downtown Village Specific Plan, takes place.




CONNECT MAIN STREET • MAIN STREET PROMENADE - PHASE 2 • CITY OF LEMON GROVE

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SHEET INDEX

- SHEET A:

SHEET B:

SECTIONS AND PERSPECTIVES

SHEET C1 & C2:

SHEET D:

SHEET E:

SHEET F:

SHEET G:

SHEET H:

SHEET I:

SHEET J:

SHEET K:

SHEET L:

SHEET M:

SHEET N:

DESIGN THEME EXAMPLES

SHEET O:

SHEET P:

SHEET Q:

SHEET R:

SHEET S:

SHEET T:

SHEET U:

PLAN VIEW SHEETS

SHEET 1:

SHEET 2:

SHEET 2A:

SHEET 3:

SHEET 3A:

SHEET 3B:

SHEET 4:

SHEET 4A:

SHEET 5:

SHEET 5A:

SHEET 6:

SHEET 6A:

SHEET 7:

SHEET 7A:

SHEET 7B:

SHEET 7C:

SHEET 7D:
- TITLE SHEET / INDEX / QUANTITIES

PROPERTY / ROW OVERVIEW

GENERAL OVERVIEW PLAN & PERSPECTIVES

SECTION 1

SECTION 2

SECTION 3

SECTION 4

SECTION 5

SECTION 6

SECTION 7

SECTION 8

SECTION 9

SECTION 10

SECTION 11

PROJECT THEMING DIAGRAM

GEOLOGIC TIME EXAMPLES

WEATHERED FORCE EXAMPLES

NATURAL EVOLUTIONARY EXAMPLES

KUMEYAAY PERIOD EXAMPLES

SPANISH / MEXICAN PERIOD EXAMPLES

EARLY PIONEER PERIOD EXAMPLES

LOWER SAN ALTOS

MASSACHUSETTS STATION

MASSACHUSETTS STATION DETAIL PLAN

MASSACHUSETTS-SAN PASQUAL

STREET CLOSURE 1

STREET CLOSURE 2

BERYL ST.

BERYL ST. DETAIL PLAN

MT VERNON-SAN MIGUEL

STREET CLOSURE 3

SAN MIGUEL-CENTRAL

STREET CLOSURE 4

CENTRAL-BROADWAY

STREET CLOSURE 5

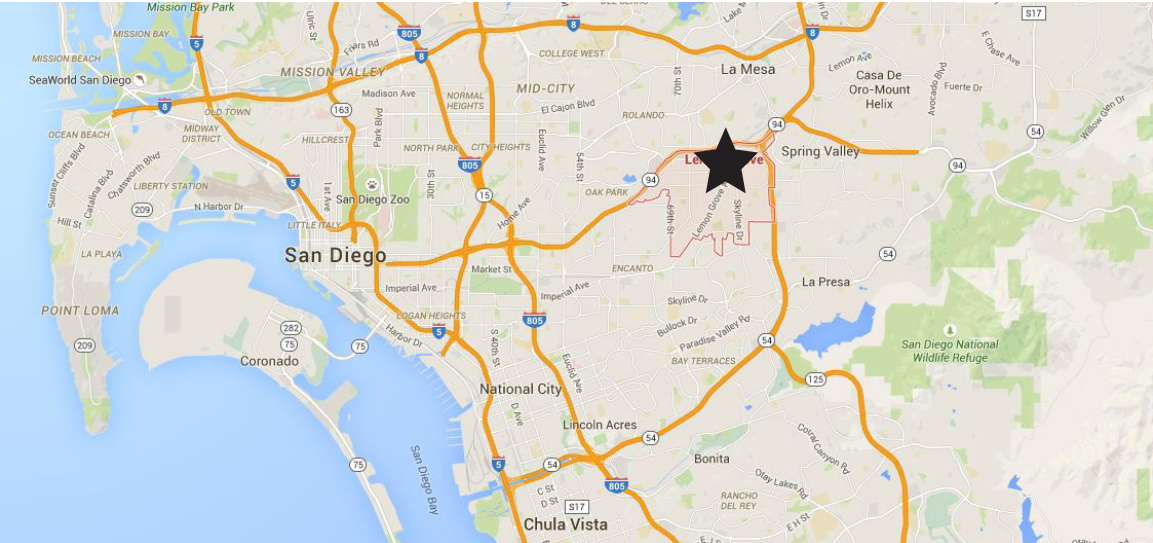
PHASING DIAGRAM SHORT-TERM

PHASING DIAGRAM MID-TERM

PHASING DIAGRAM FINAL

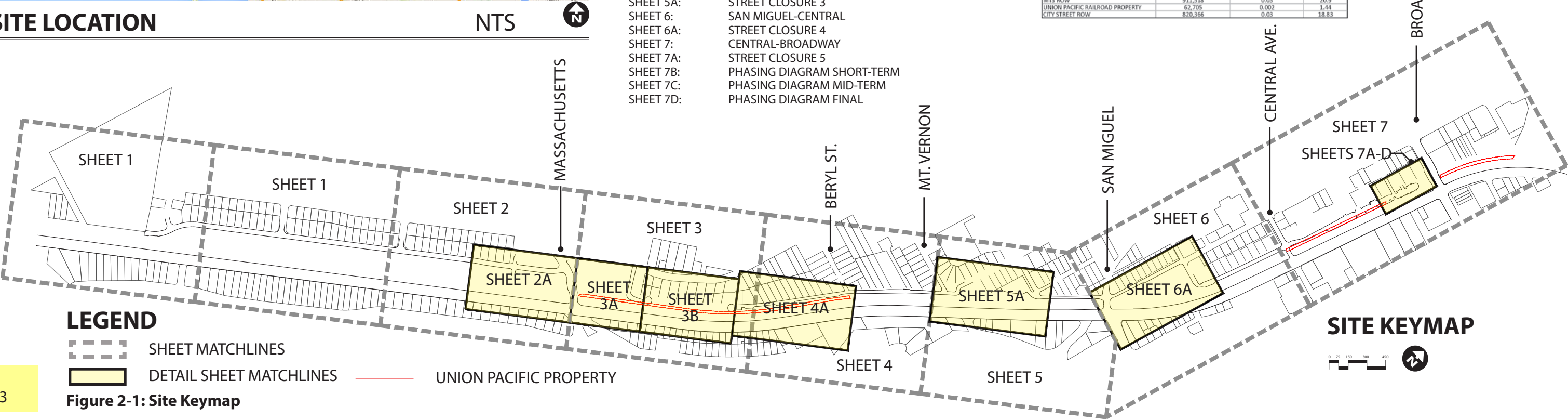
MAJOR FEATURES AND QUANTITIES

CATEGORY/ITEM	LENGTH (FT.)	LENGTH (MI.)	AREA (SQ. FT.)	COUNT
TRAIL				
TOTAL LENGTH OF PROMENADE	11,030	2.09	-	-
STREET CLOSURES	2,462	0.47	-	5
ONE-WAY STREETS	1,016	0.19	-	-
URBAN TRAIL	1,232	0.23	-	-
COUNTRY (D.G.) TRAIL	9,640	1.83	-	-
BIKE BOULEVARD	4,706	0.89	-	-
CLASS 1 MULTI-USE TRAIL	5,755	1.09	-	-
RE-LOCATED FENCE	1,288	0.24	-	-
FOOTBRIDGES	116	-	-	5
PROPOSED STREET CUL-DE-SACS	-	-	-	3
BULB-OUTS	-	-	-	7
CROSSWALKS	642	-	-	17
BUS STATIONS/STOPS	-	-	-	3
LANDSCAPING				
EXISTING TREES TO REMAIN	-	-	-	199
EXISTING TREES TO BE REMOVED	-	-	-	286
PROPOSED TREES	-	-	-	672
RESTORED CREEK	4,740	0.9	-	-
BIOSWALES	-	-	1,857	3
ACTIVE USE AREAS				
HORSESHOE COURT	-	-	500	1
BOULDERING	-	-	2,100	1
ROCK CLIMBING STRUCTURE	-	-	1,262	1
BMX PUMP TRACK	-	-	6,019	1
SKATE PARK	-	-	4,663	1
DOG PARK	-	-	7,914	2
ROPE CLIMB COURSE	-	-	455	1
NET CLIMB COURSE	-	-	553	1
HOPPING/CLIMBING COURSE	-	-	1,465	1
BALANCE/AGILITY COURSE	-	-	1,526	1
PARK COURSE STATIONS	-	-	1,075	7
CHILDREN'S ADVENTURE PLAYGROUND	-	-	1,364	1
KUMEYAAY THEMED PLAYGROUND	-	-	1,581	1
VIEWING DECK/YOGA PLATFORM	-	-	1,093	1
EDUCATION, ART, & PASSIVE USE AREAS				
INTERPRETIVE PANELS	-	-	-	19
INTERPRETIVE PLAZA SPACE	-	-	3,624	8
TRAIL PORTALS	-	-	-	11
PICNIC AREAS	-	-	3,630	2
GRAFFITI WALL	117	-	-	1
ART WALL	117	-	-	1
SEDIMENTARY/GEOLOGIC WALL	117	-	-	1
SIT ONLY BENCHES	-	-	-	16
COMMUNITY GARDEN	-	-	990	1
PUBLIC ART OPPORTUNITIES	-	-	-	11
ECOSYSTEM/KUMEYAAY ART	-	-	-	4
PUBLIC ARTWORK	-	-	-	3
RANCH/FARM ARTWORK	-	-	-	3
PARKING				
		EXISTING	PROPOSED	+/-
MASSACHUSETTS STATION	Parking lot	Approx. 146 (field verify)	123	-23
FIRST BAPTIST CHURCH OF LG	On-street (Main St.)	Approx. 45 (field verify)	8	-37
LEMON GROVE CITY HALL	Parking lot/On-street	Approx. 67 (field verify)	43	-24
PACIFIC TO BROADWAY	Angled/Parallel on-street	23	23	-
MTS SERVICE PARKING		0	2	2
OVERALL SITE STATISTICS				
		AREA (SQ. FT.)	AREA (SQ. MI.)	AREA (ACRES)
MTS ROW		911,518	0.03	20.9
UNION PACIFIC RAILROAD PROPERTY		62,705	0.002	1.44
CITY STREET ROW		820,366	0.03	18.83



SITE LOCATION

NTS





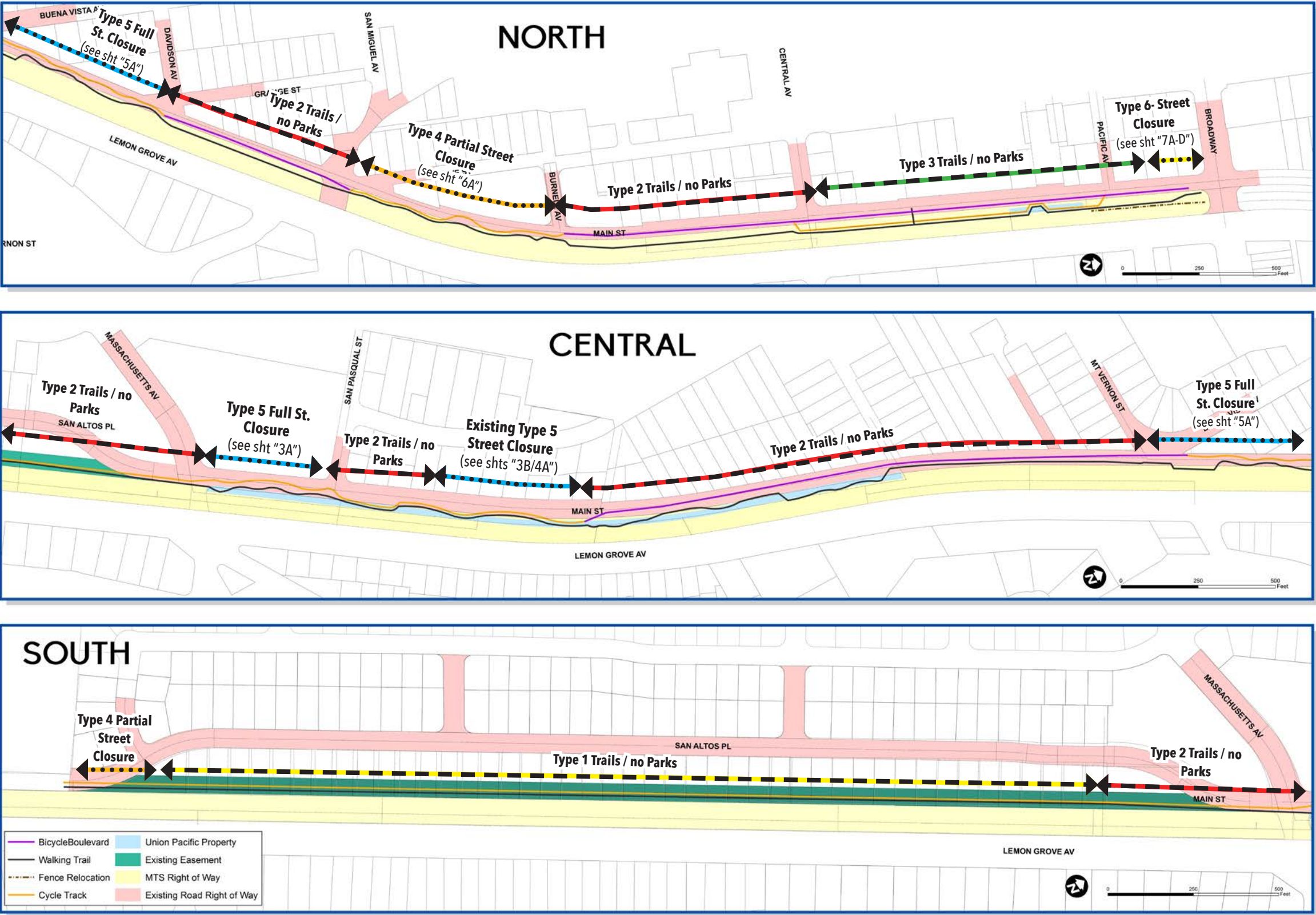
Property Ownership & Right of Way

Most of the proposed improvements will occur within City Right of Way (ROW) associated with Main Street. However, some areas will encroach within the MTS Trolley ROW and other areas will occur on Union Pacific “sliver” properties.

Proposed Amenities and Treatments

Design treatments vary along the corridor. Trail only segments are either multi-use paths located away from a roadway (Type 1), a bike boulevard and side trail combination located along a roadway (Type 2) or consist of more urban paved trails and bike boulevards along roadways (Type 3). Other trails are associated with street closures and parklands. These include linear parks associated with partial street closures (one travel lane remaining open) (Type 4), pocket parks associated with wider parkland areas resulting from a full street closure (Type 5) or plazas resulting from a street closure (Type 6). Each type of trail has typical features and amenities proposed. See the table below for a listing of typical proposed amenities and treatments.

CONNECT MAIN STREET DESIGN FEATURE OVERVIEW	TRAIL ONLY SEGMENTS			PATHS WITH PARKS SEGMENTS		
	1. Multi-use Trail Away from Roadway	2. Trails Along Roadway	3. Urban Trail & Bike Blvd.	4. Linear Park with Partial Street Closure	5. Pocket Parks with Full Street Closure	6. Plazas Resulting from Street Closure
A. CIRCULATION						
A.1 Hiking Path	✓	✓		✓	✓	✓
A.2 Walking Urban Trail			✓			✓
A.3 Bike Boulevard		✓				✓
A.4 Multi-use Path	✓			✓	✓	
B. SURFACES						
B.1 Soft Surface	✓					
B.2 Firm Surface	✓	✓	✓	✓	✓	✓
B.3 Hard Surface		✓	✓	✓	✓	✓
C. PARK FEATURES						
C.1 Native Garden				✓		
C.2 Community Garden					✓	
C.3 Dog Park			✓			
C.4 Skills / Health Park				✓	✓	
C.5 Sporting Park					✓	
C.6 Education Park					✓	✓
D. STREET AMENITIES						
D.1 Native Plantings	✓	✓		✓	✓	
D.2 Riparian Restoration	✓	✓				
D.3 Street Trees		✓	✓	✓	✓	✓
D.4 Picnic Tables				✓	✓	✓
D.5 Shade Structures				✓	✓	✓
D.6 Seating				✓	✓	✓
D.7 Trash Receptacles				✓	✓	✓
D.8 Street Lighting				✓	✓	✓
D.9 Pedestrian Lighting	✓			✓	✓	✓
E. RUNOFF IMPROVEMENTS						
E.1 Runoff Basins		✓	✓	✓	✓	
E.2 Bioswales	✓	✓	✓	✓	✓	✓
E.3 Pervious Surfaces		✓	✓	✓	✓	✓
E.4 Infiltration Areas				✓	✓	
F. EDUCATION PANELS						
F.1 Milemarkers	✓	✓	✓		✓	✓
F.2 Datemarkers	✓	✓	✓		✓	✓
F.3 Interpretive Panels		✓	✓		✓	✓
F.4 Interpretive Kiosks					✓	✓
G. PUBLIC ART						
G.1 Portals	✓			✓	✓	✓
G.2 Fence Art		✓	✓	✓	✓	✓
G.3 Wall Art					✓	✓
G.4 Historic Art Pieces			✓	✓	✓	✓
G.5 Natural Art Pieces	✓		✓		✓	
G.6 Art Furnishings				✓	✓	✓



TRAIL TYPE LEGEND (1-3= Trails Only; 4-6: Trails with Parks)

1. Multi-use Trail Away from Roadway    2. Trail Along Roadway (no parkland)    3. Urban Trail & Bike Boulevard    4. Linear Park with Partial Street Closure    5. Pocket Parks with Full Street Closure    6. Plazas Resulting from Street Closure

Figure 2-2: ROW Ownership & Amenity Overview Diagram



# 3 | Overview Plan & Perspectives

3.1 Design Overview | Sheet C1



1 Typical creek restoration



3 Trail through MTS Trolley Station



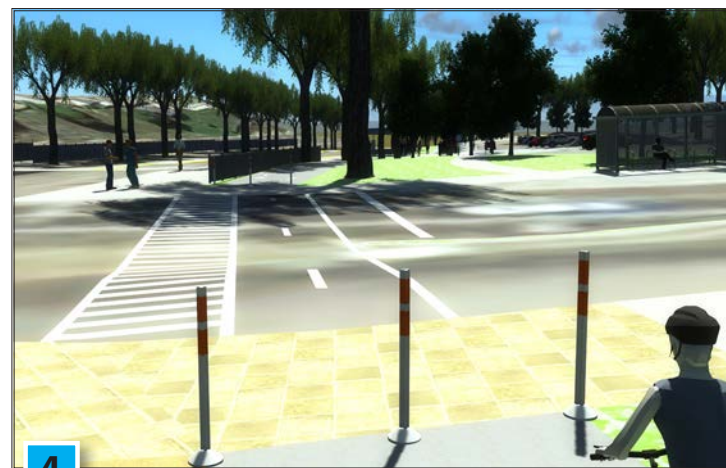
5 San Pasqual linear park and gateway



7 Rock climbing area



2 Creek side trail



4 Controlled pedestrian crossing concepts



6 Skateboard and bike park



8 Exercise components along the trail





9 Children's adventure play area



11 Kumeyaay gateway



13 North end parking lot turnaround



10 Kumeyaay-themed community garden



12 Spanish era interpretive space



14 Broadway plaza interpretive elements



15 Walkway bulb-outs and crossings



# 4 | Concept Cross-Sections

## 4.1 Section Keymap

### 4.1 Section Keymap

Eleven cross-sections were developed throughout the project corridor as shown in this keymap to illustrate typical conditions and design intent. See the following pages for the cross-section drawings.

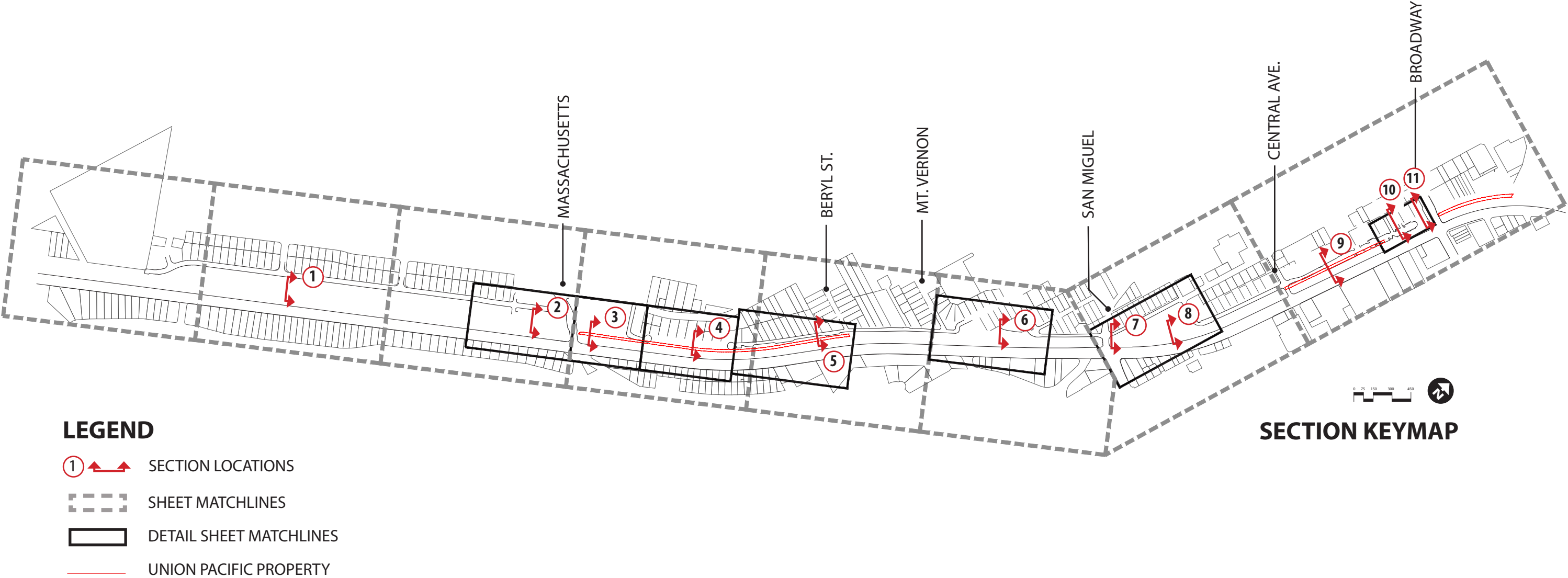
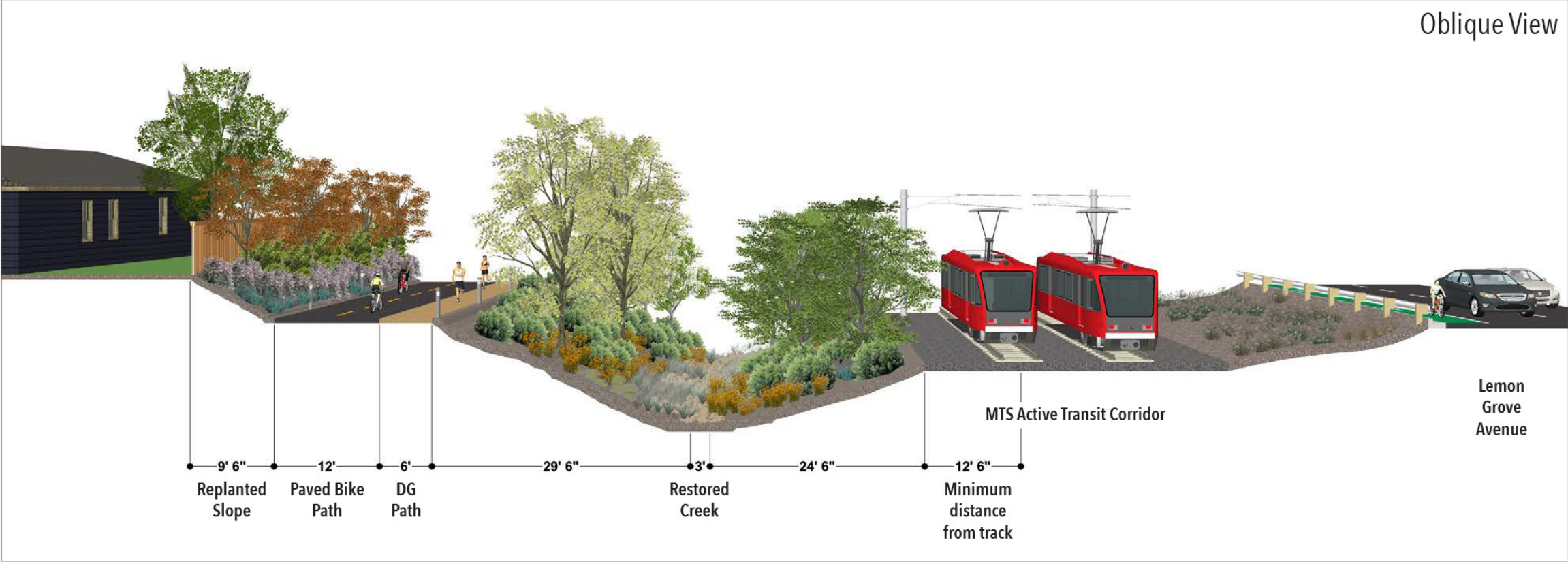


Figure 4-1: Section Keymap





**SECTION 1** (sections start at the southern project limit and proceed northward)

**SHEET D**

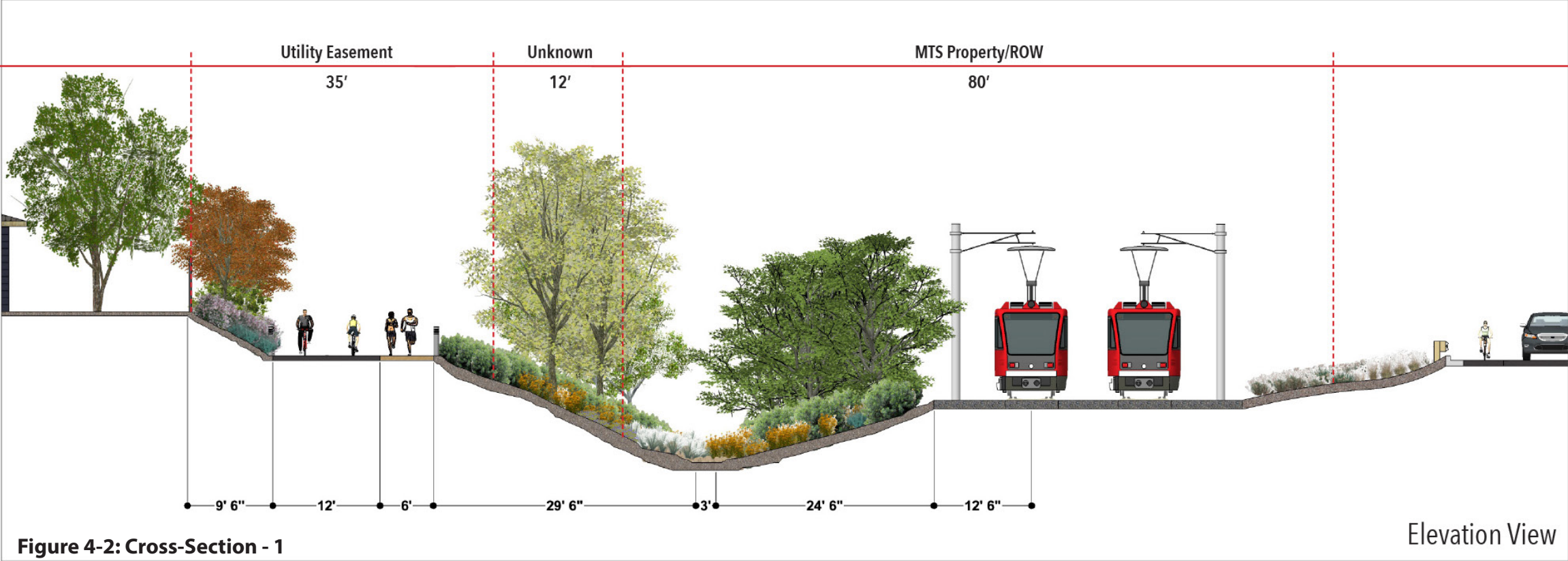
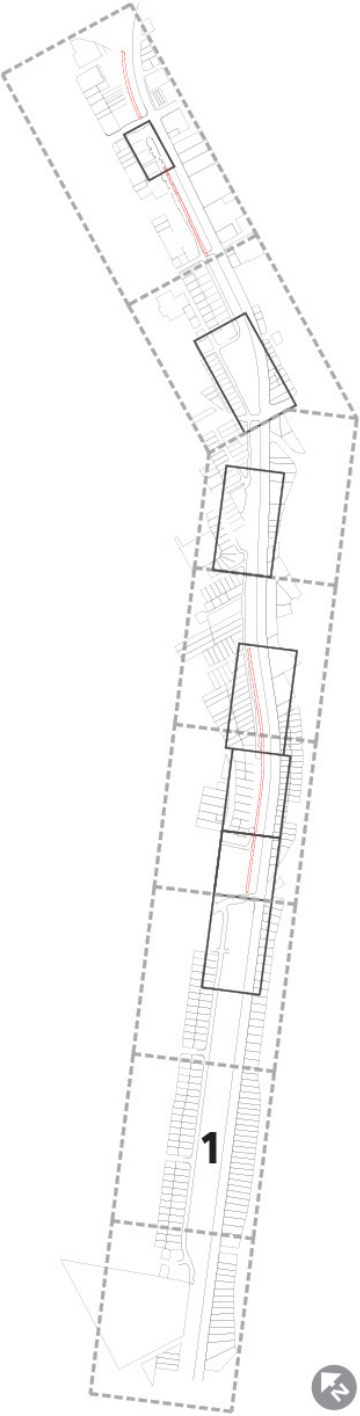


Figure 4-2: Cross-Section - 1

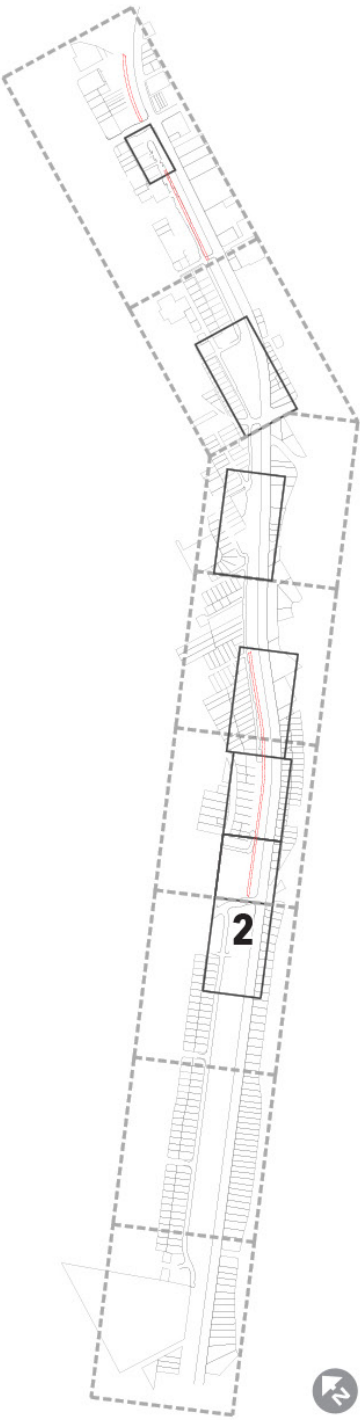
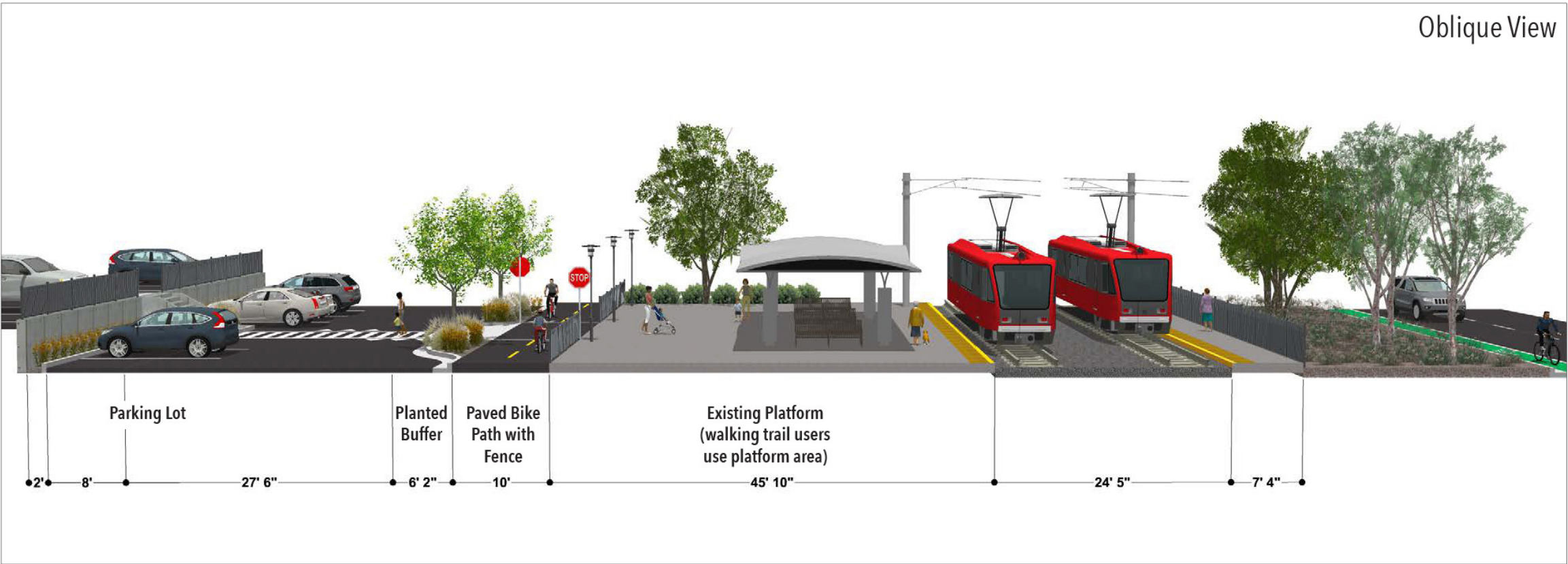


SECTION LOCATION KEY MAP



# 4 | Concept Cross-Sections

## 4.2 Cross-Sections



### SECTION 2

### SHEET E

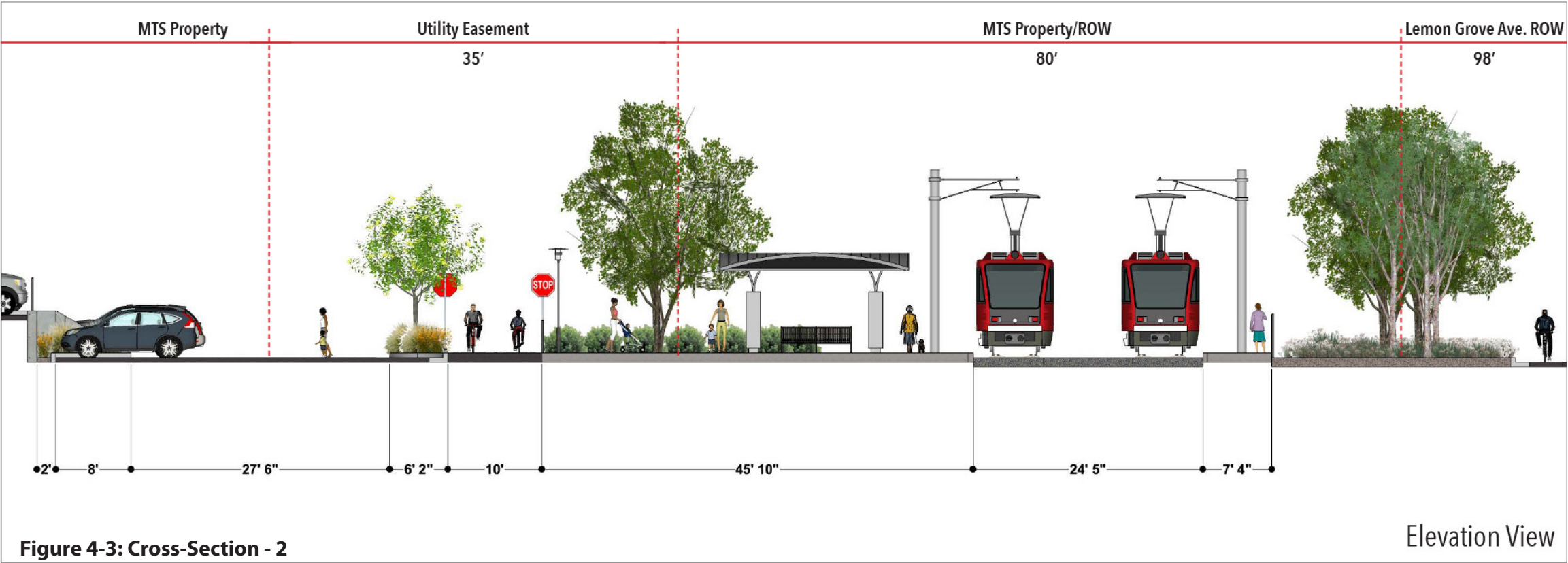
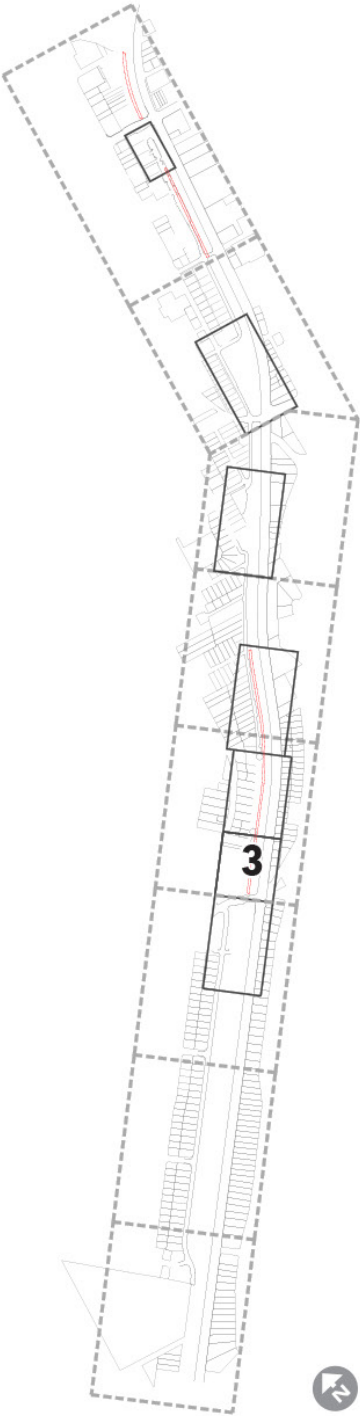
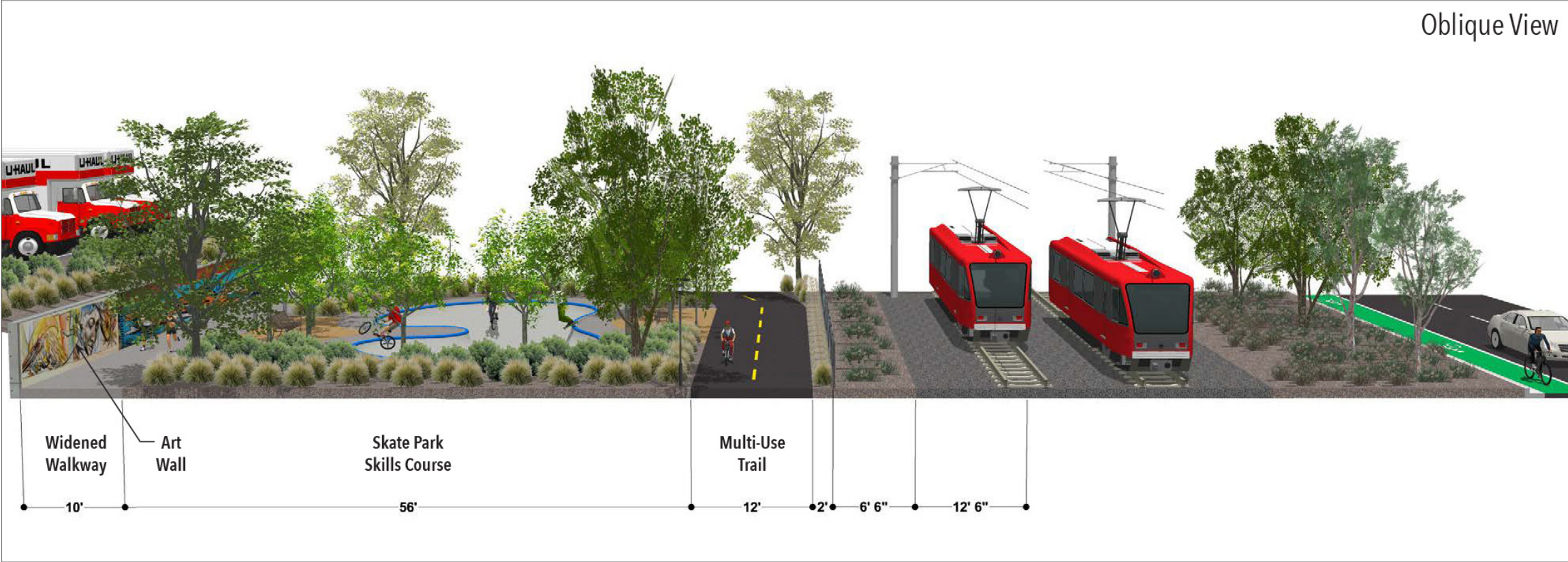


Figure 4-3: Cross-Section - 2

SECTION LOCATION KEY MAP





SECTION 3

SHEET F

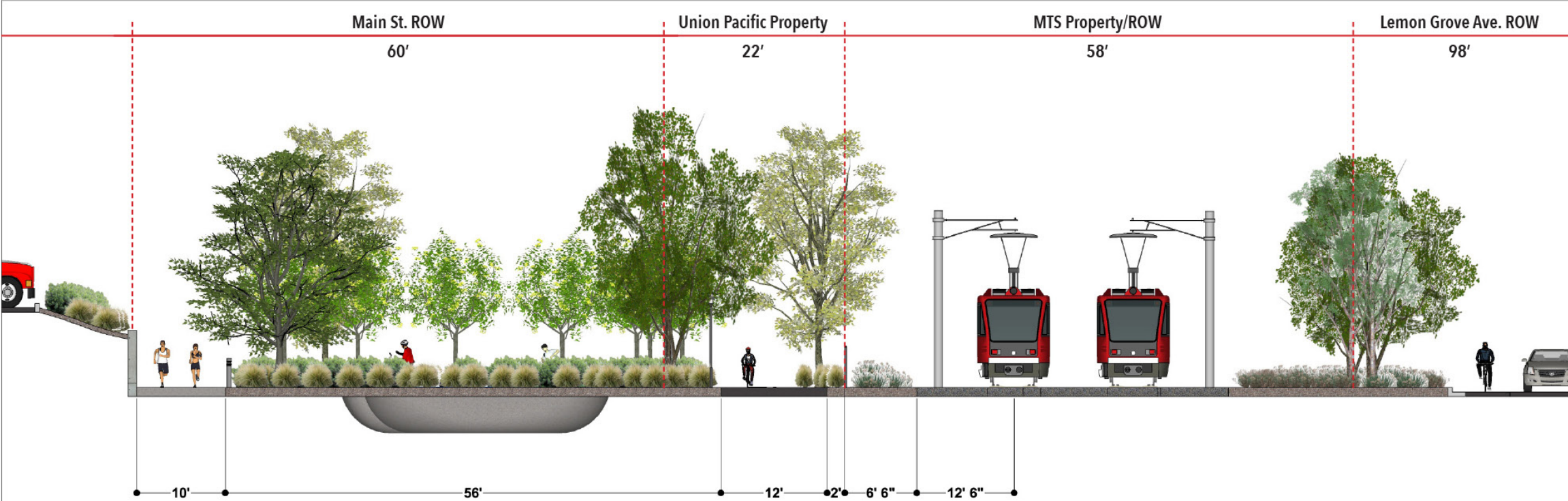


Figure 4-4: Cross-Section - 3

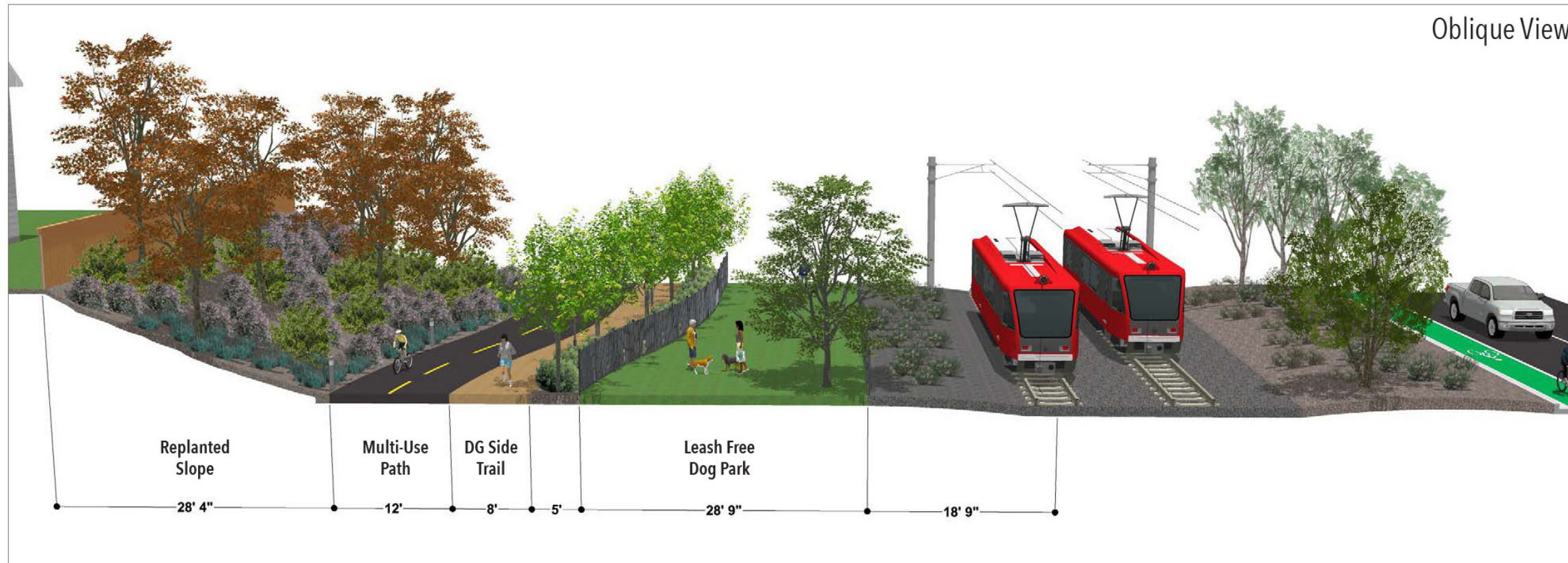
Elevation View

SECTION LOCATION KEY MAP



# 4 | Concept Cross-Sections

## 4.2 Cross-Sections



SECTION 4

SHEET G

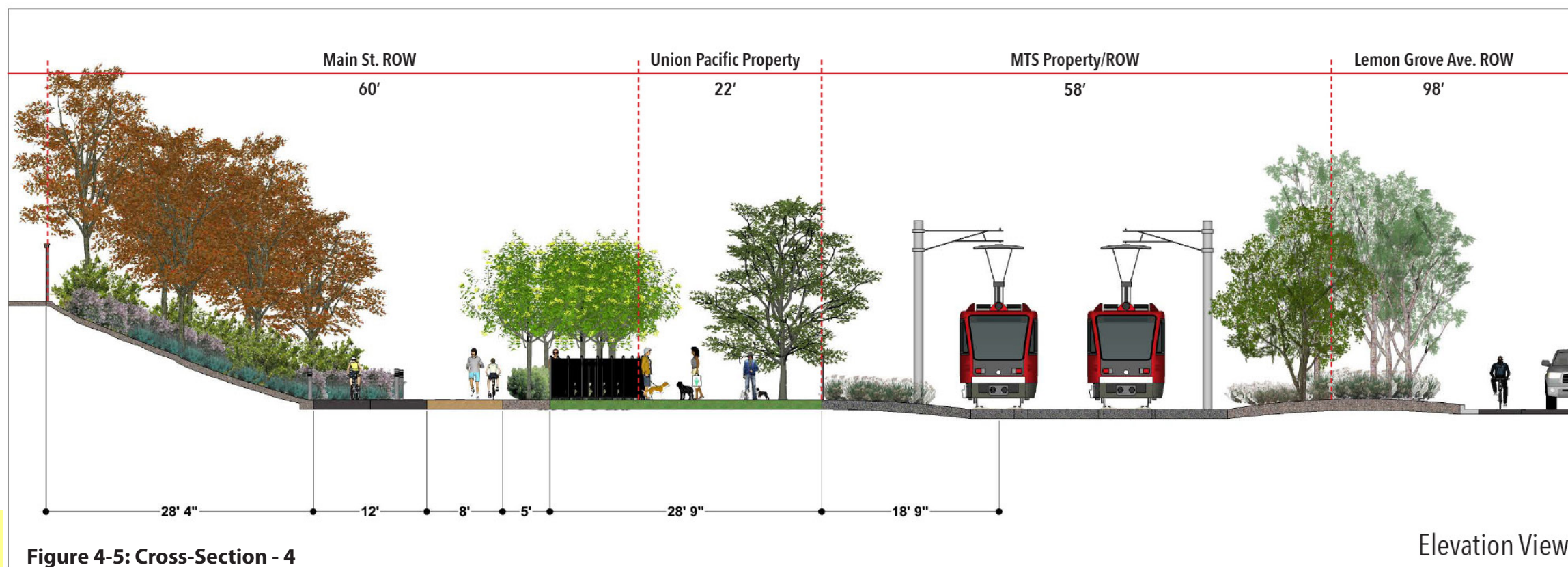
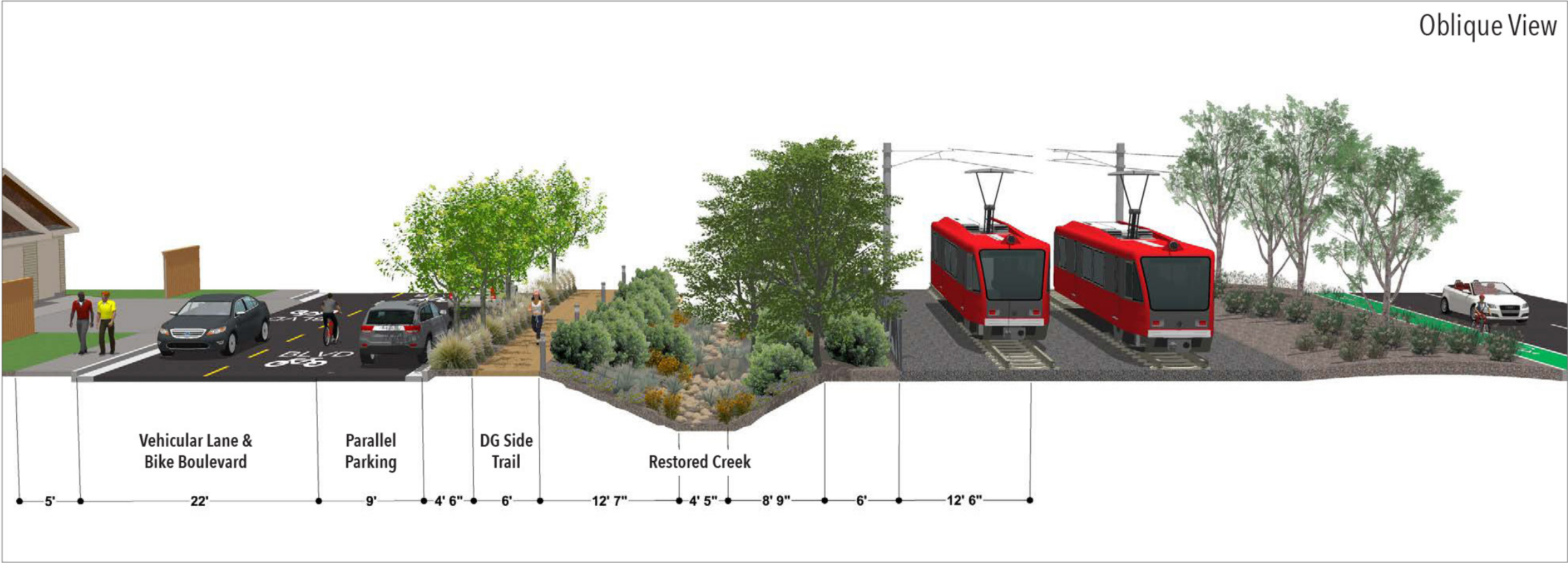


Figure 4-5: Cross-Section - 4



SECTION LOCATION KEY MAP





SECTION 5

SHEET H

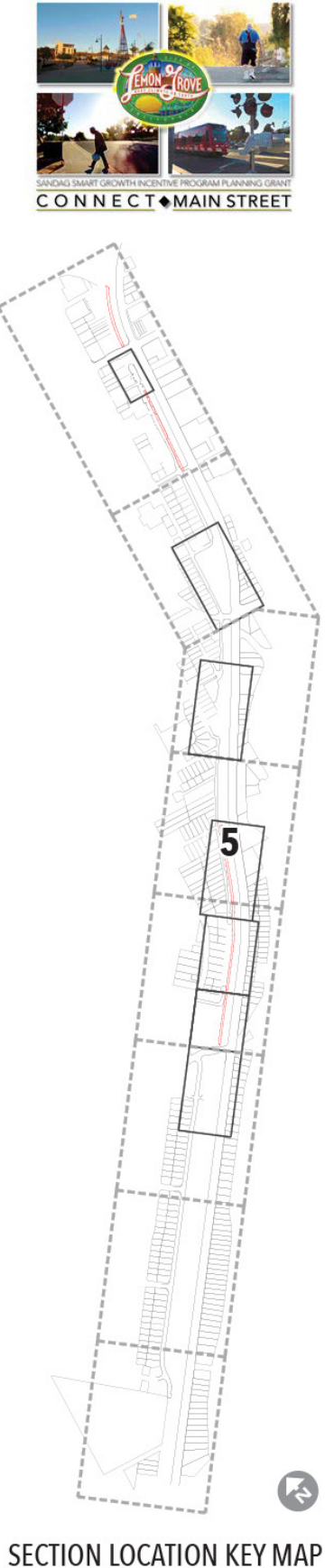
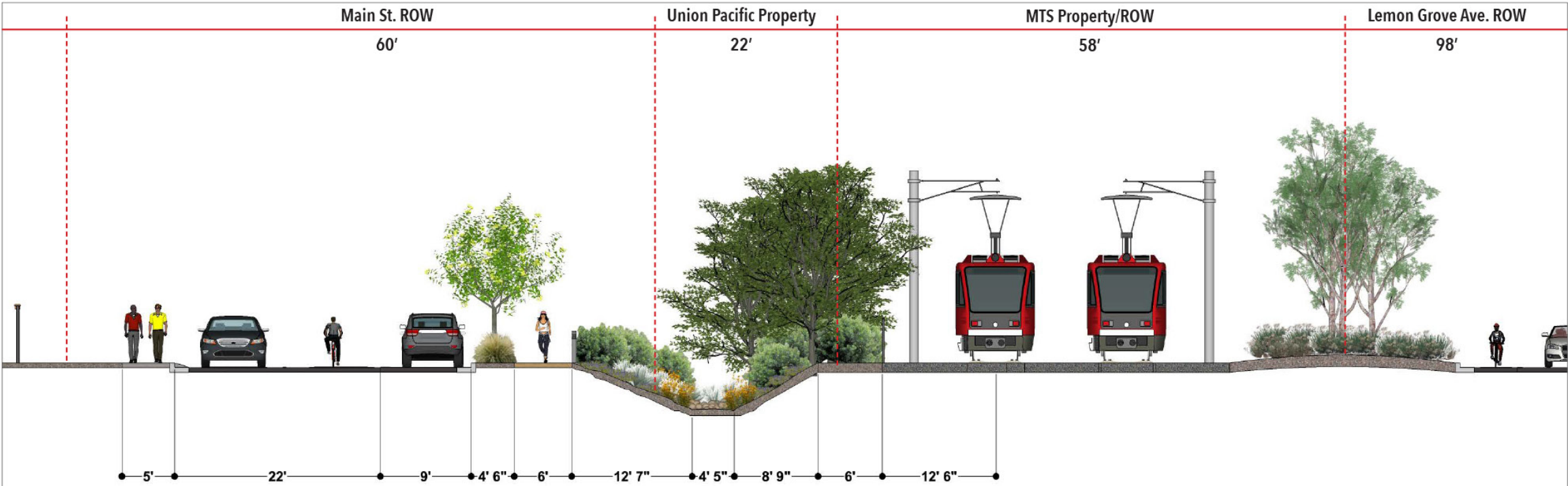


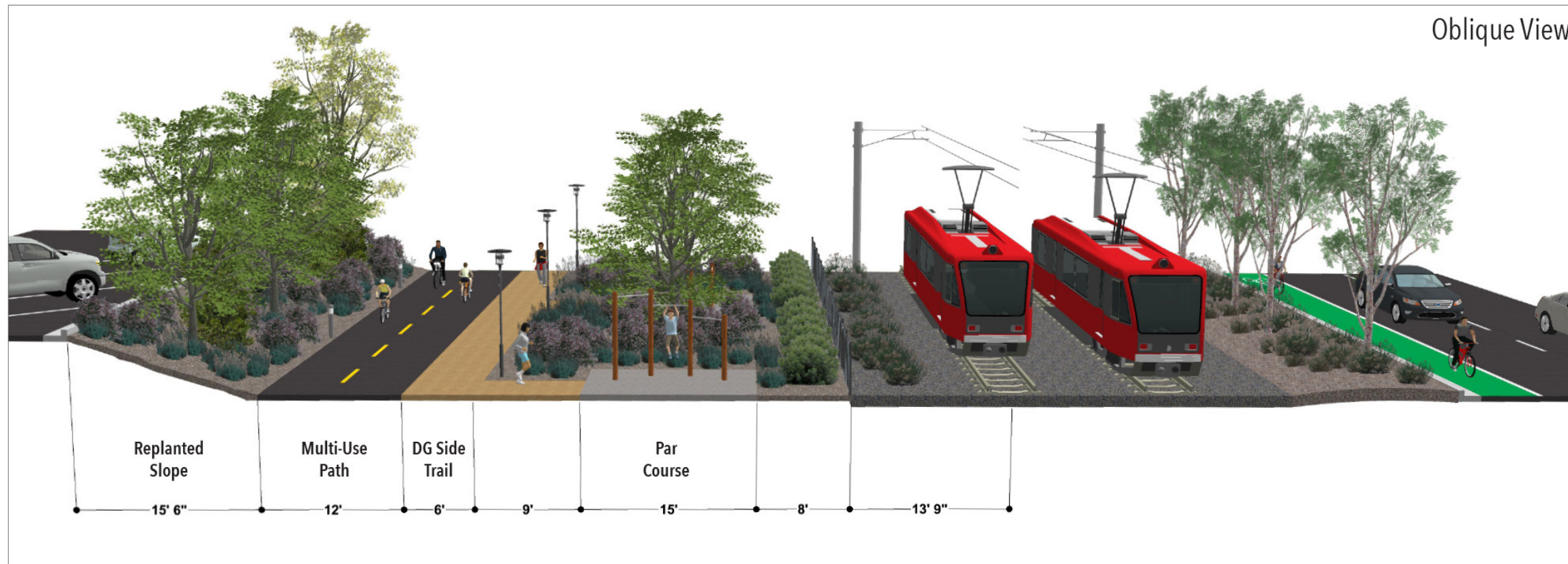
Figure 4-6: Cross-Section - 5

Elevation View



# 4 | Concept Cross-Sections

## 4.2 Cross-Sections



### SECTION 6

### SHEET I

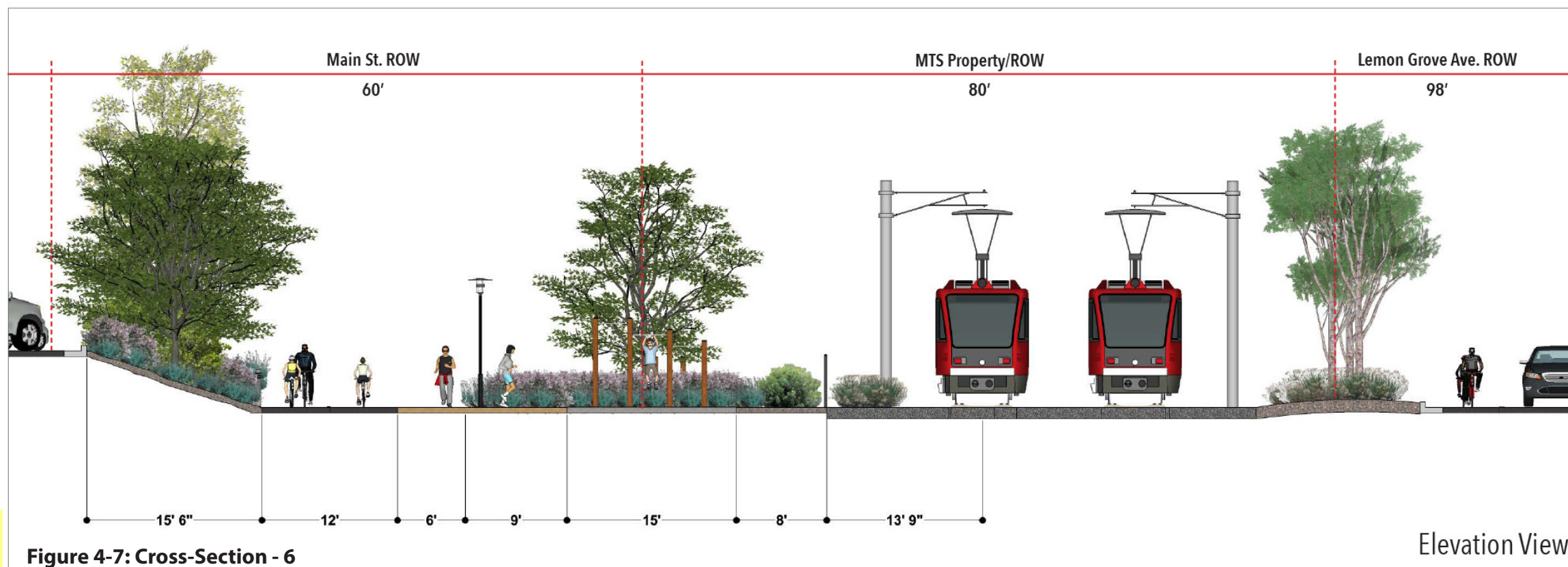
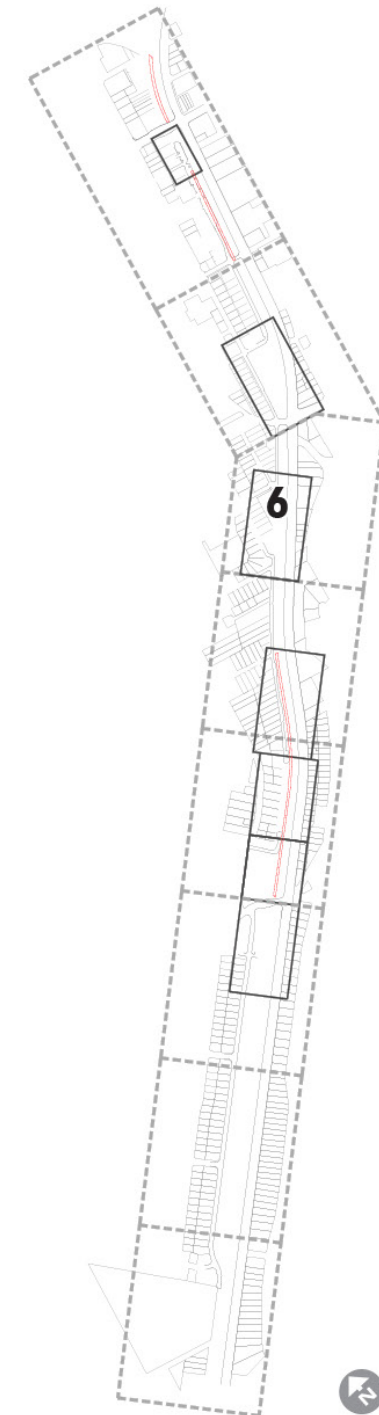
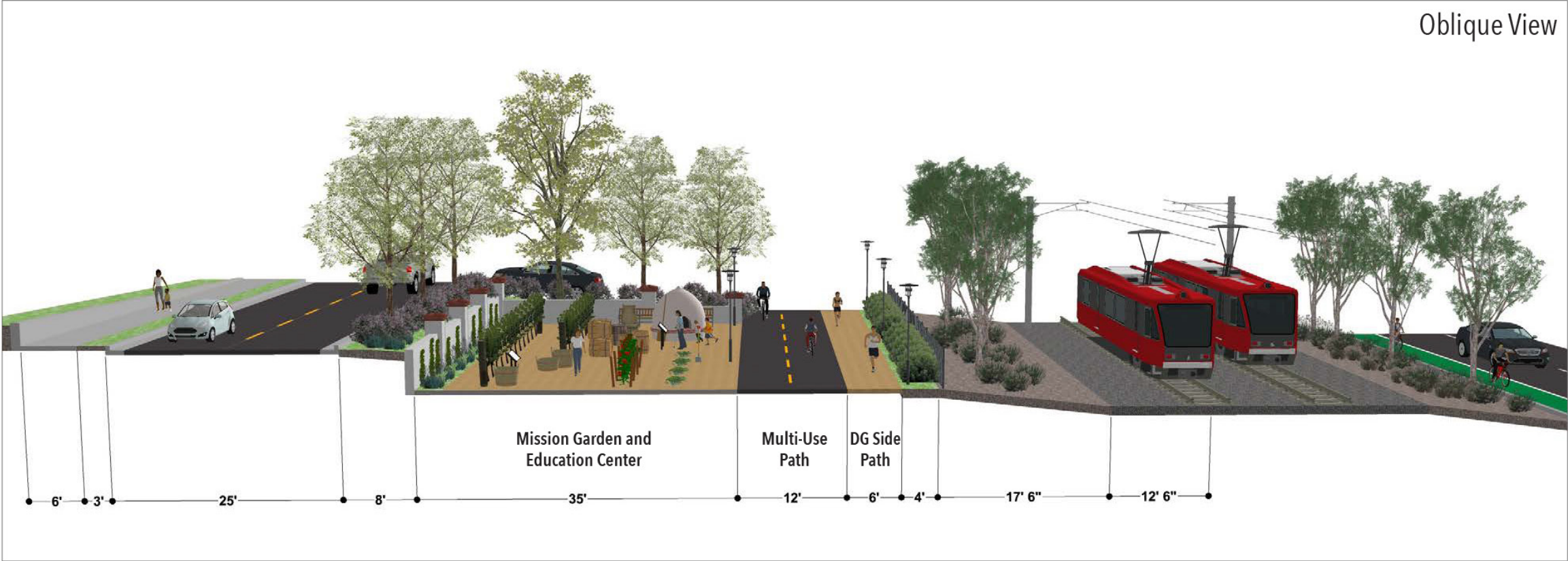


Figure 4-7: Cross-Section - 6



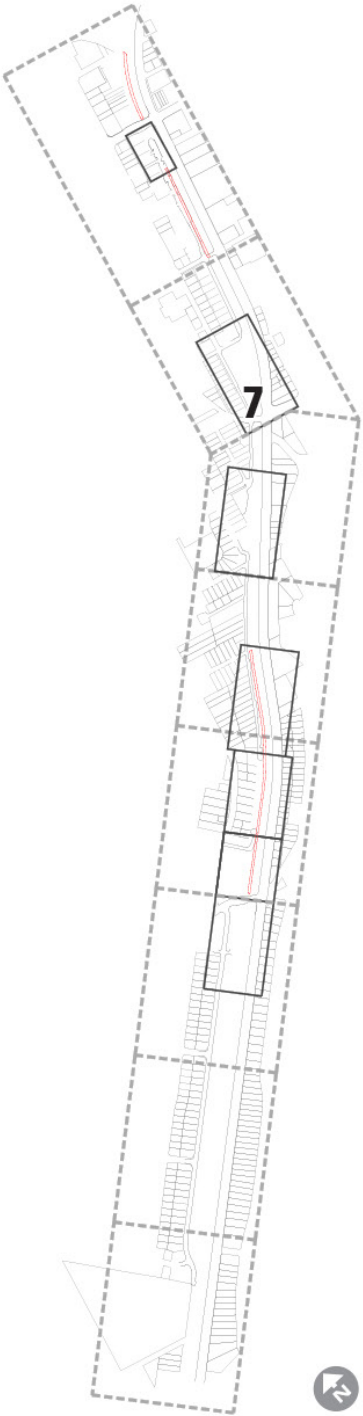
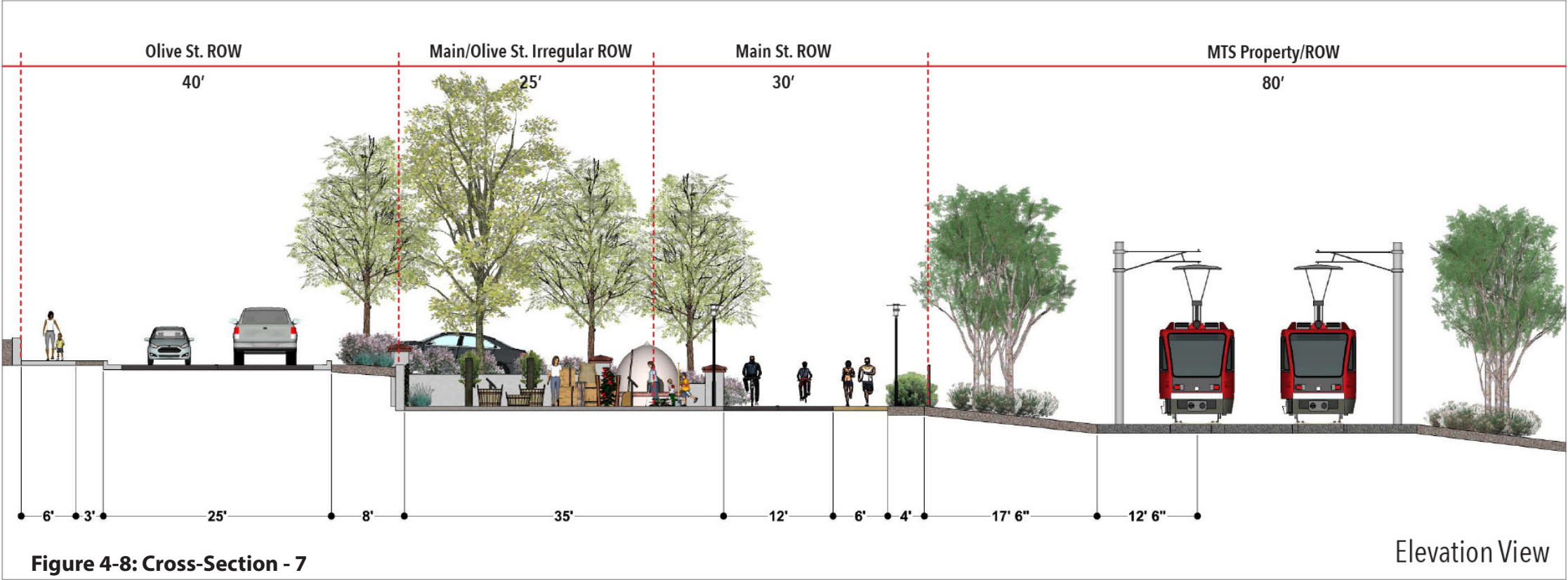
SECTION LOCATION KEY MAP





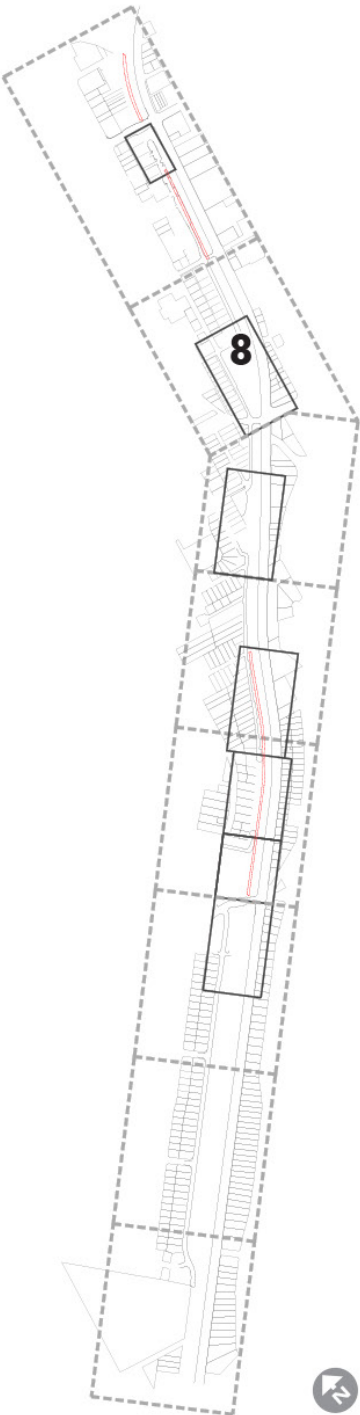
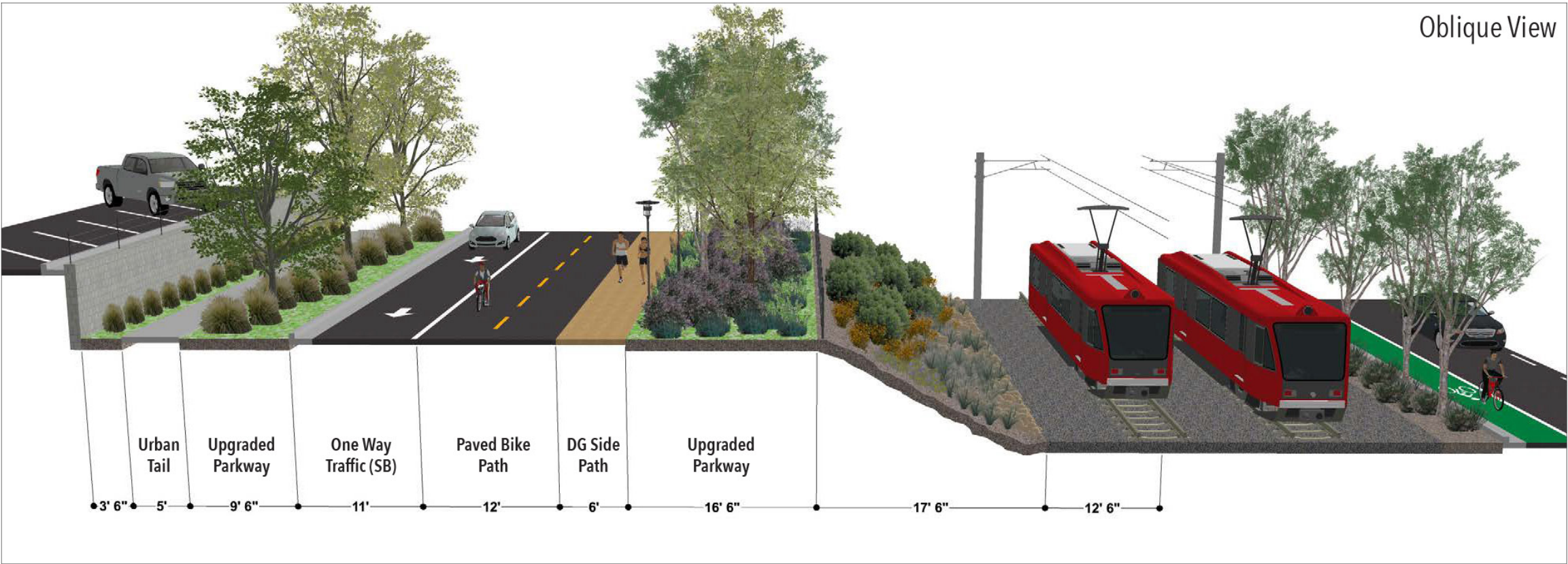
SECTION 7

SHEET J



SECTION LOCATION KEY MAP





SECTION 8

SHEET K

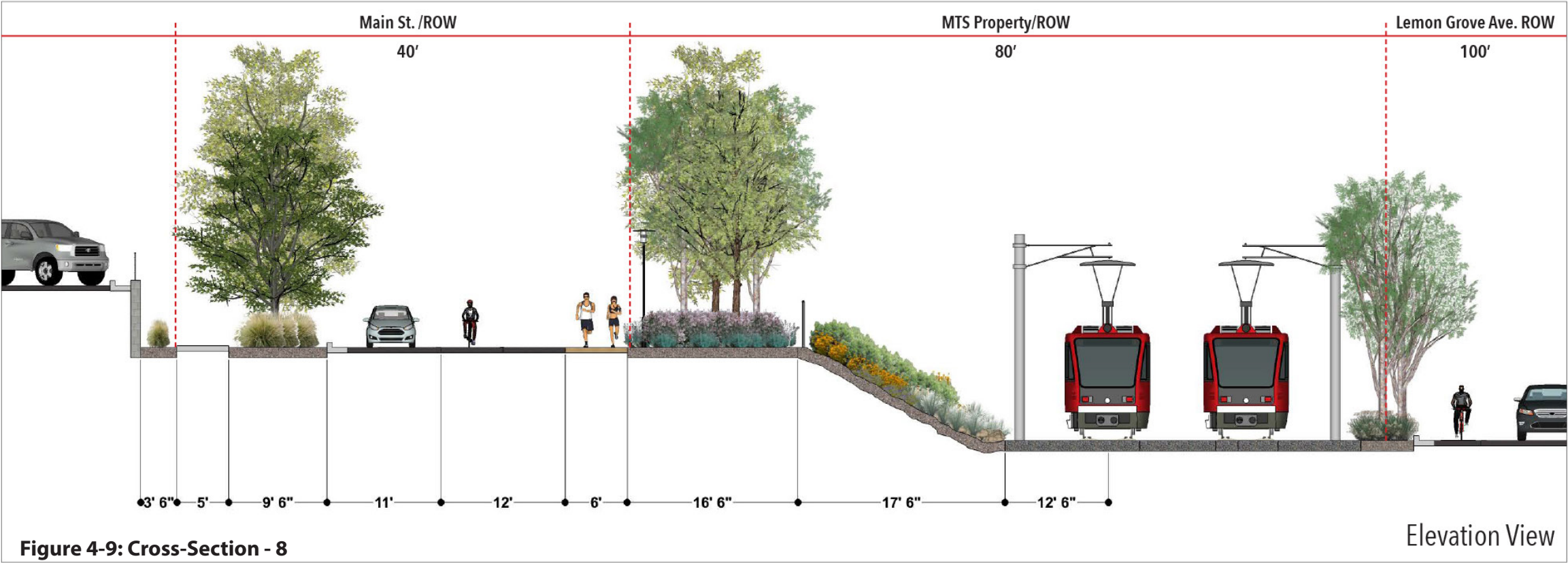
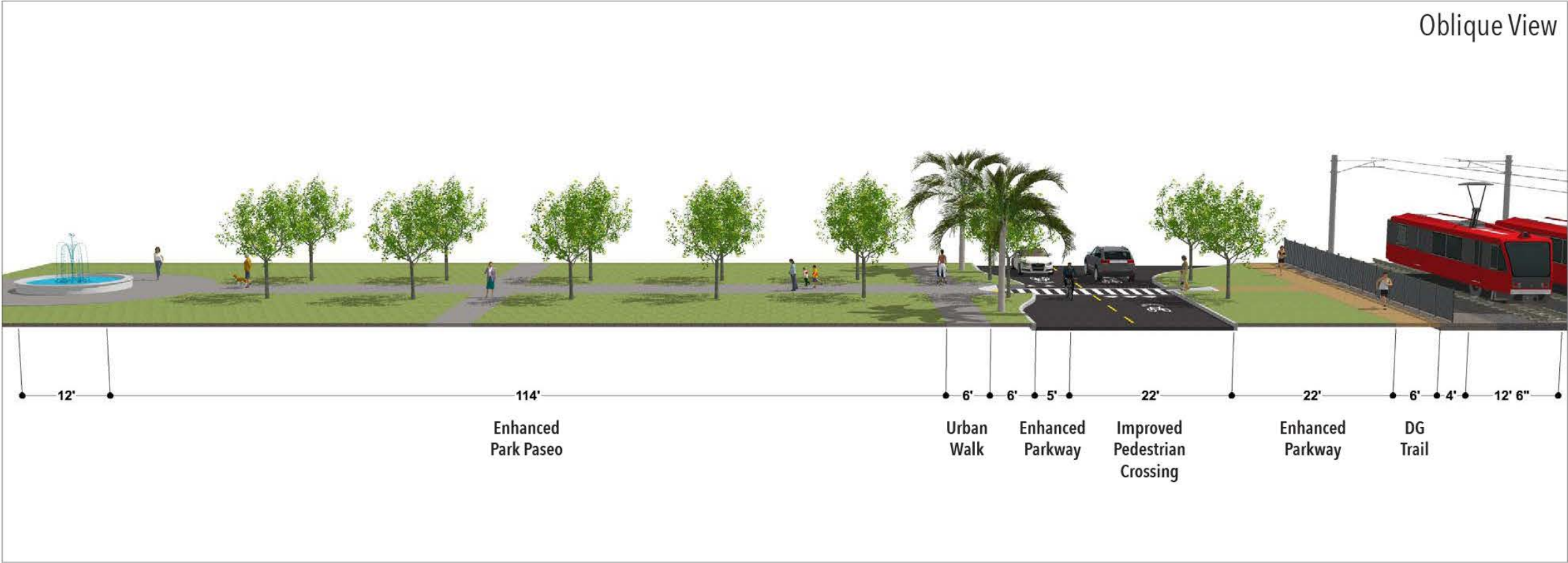


Figure 4-9: Cross-Section - 8





SECTION 9

SHEET L

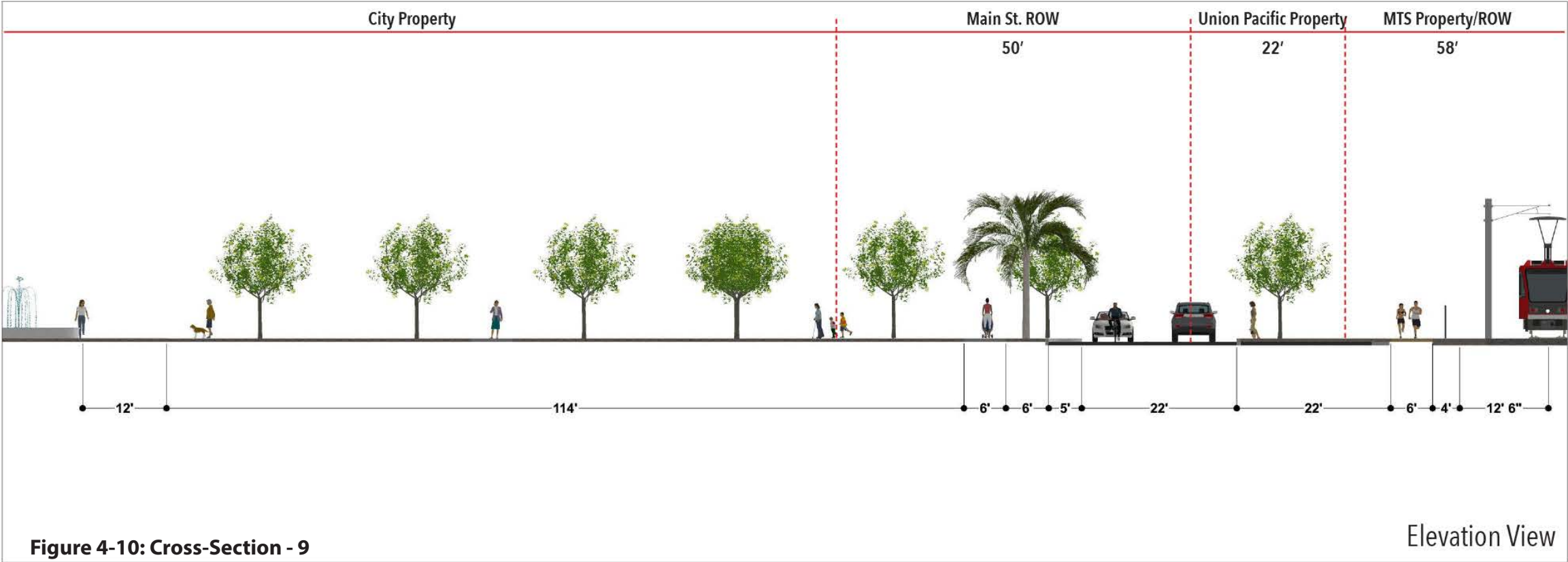
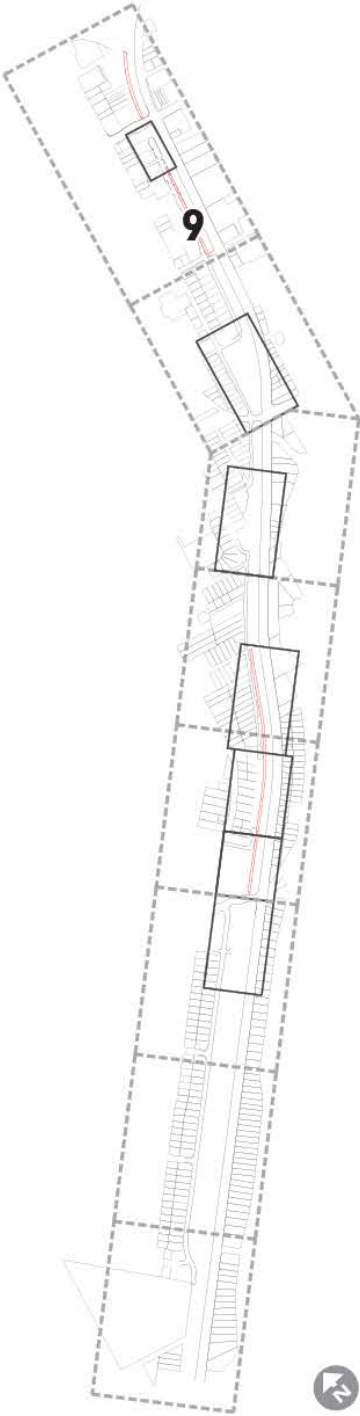


Figure 4-10: Cross-Section - 9

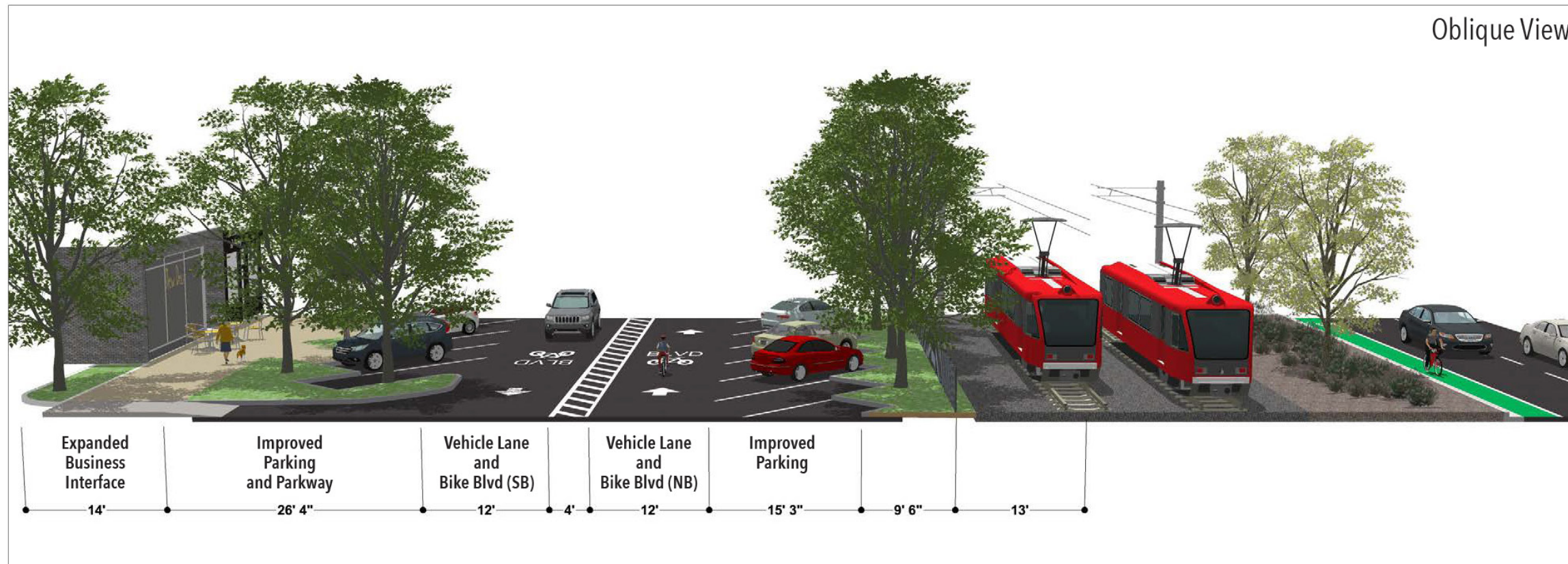


SECTION LOCATION KEY MAP



# 4 | Concept Cross-Sections

## 4.2 Cross-Sections



### SECTION 10

### SHEET M

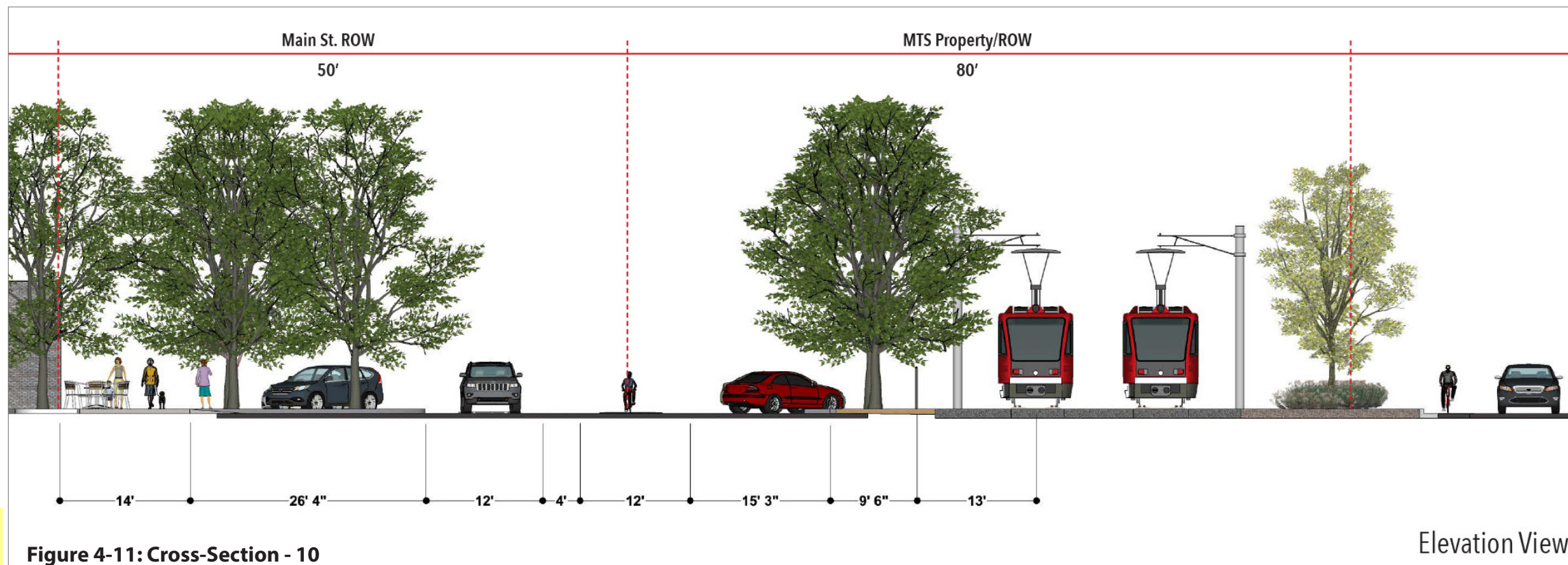
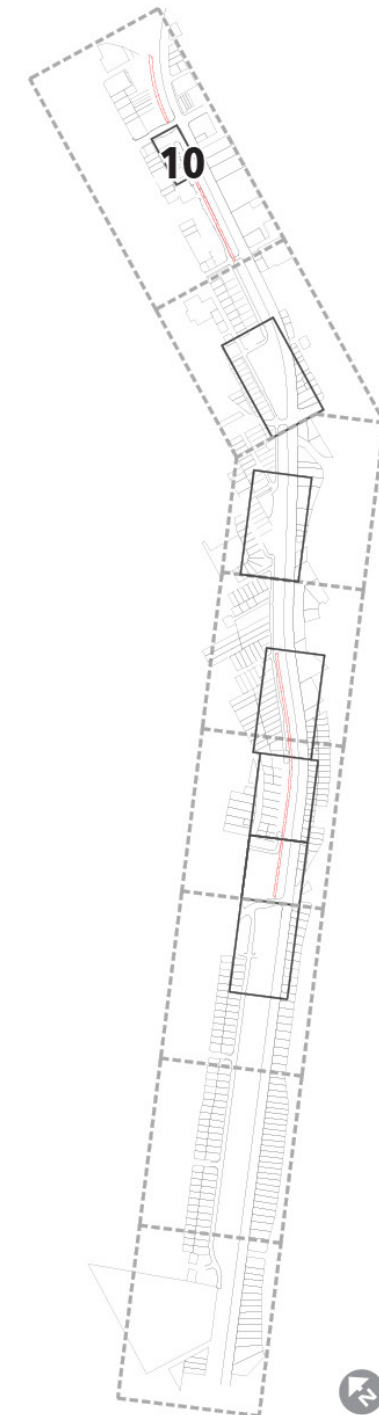
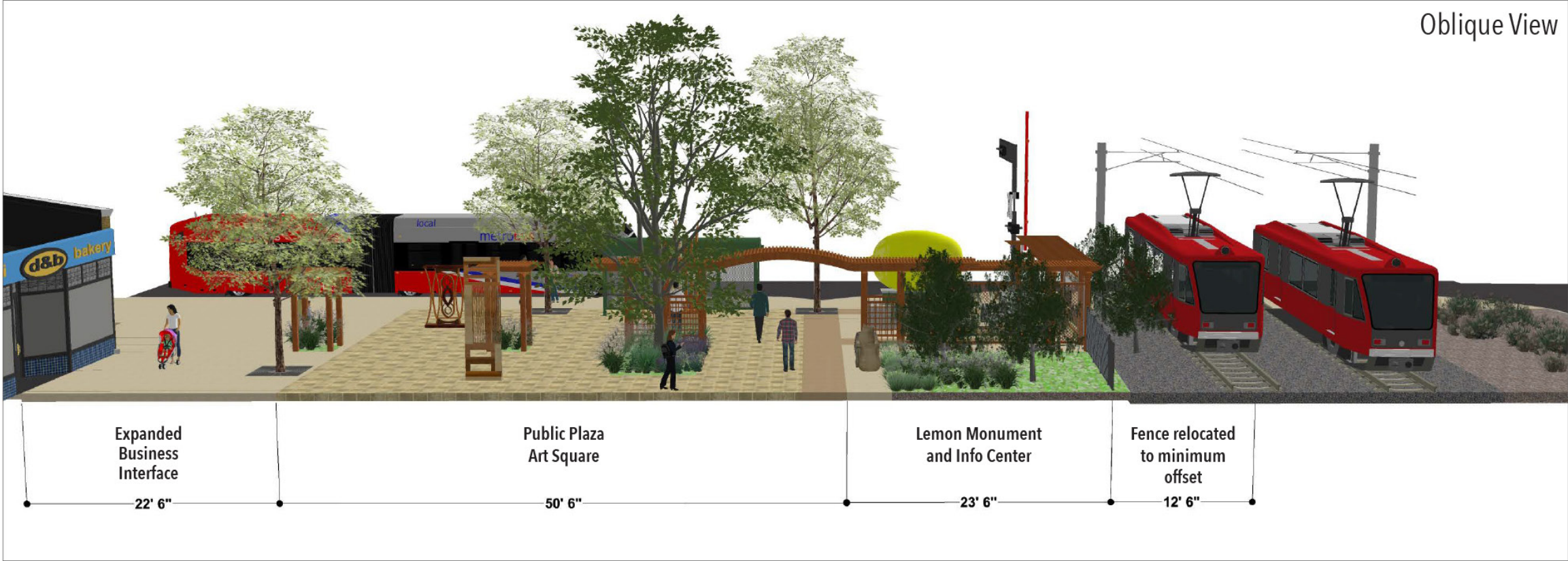


Figure 4-11: Cross-Section - 10



SECTION LOCATION KEY MAP





SECTION 11

SHEET N

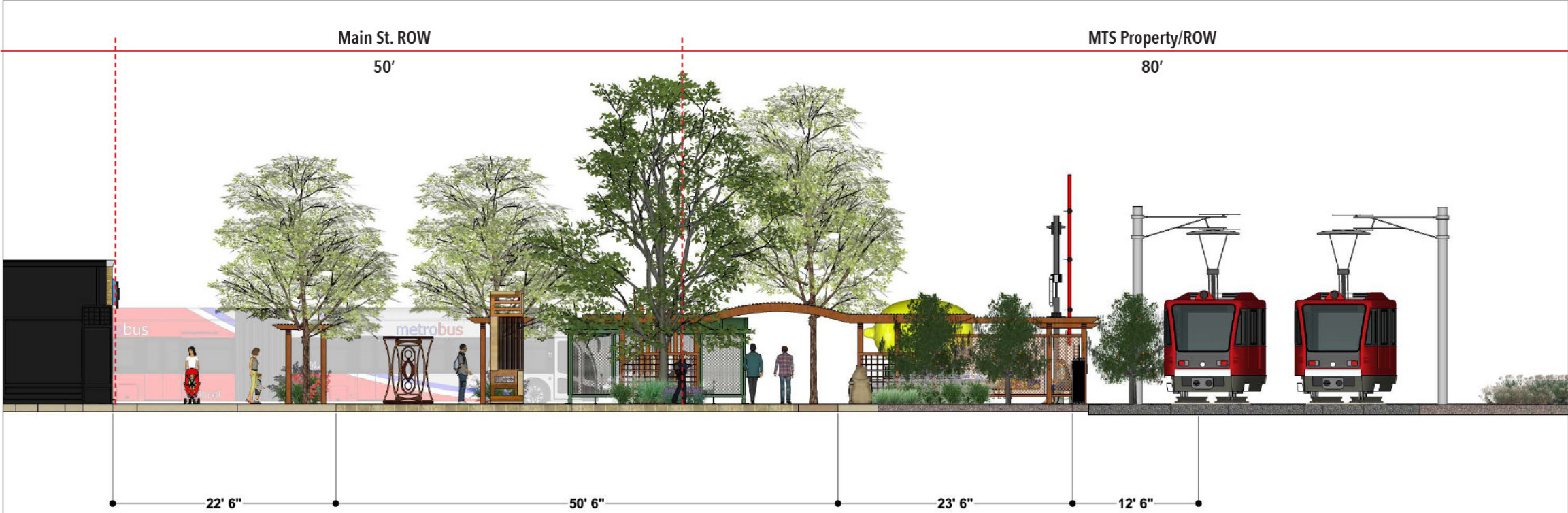
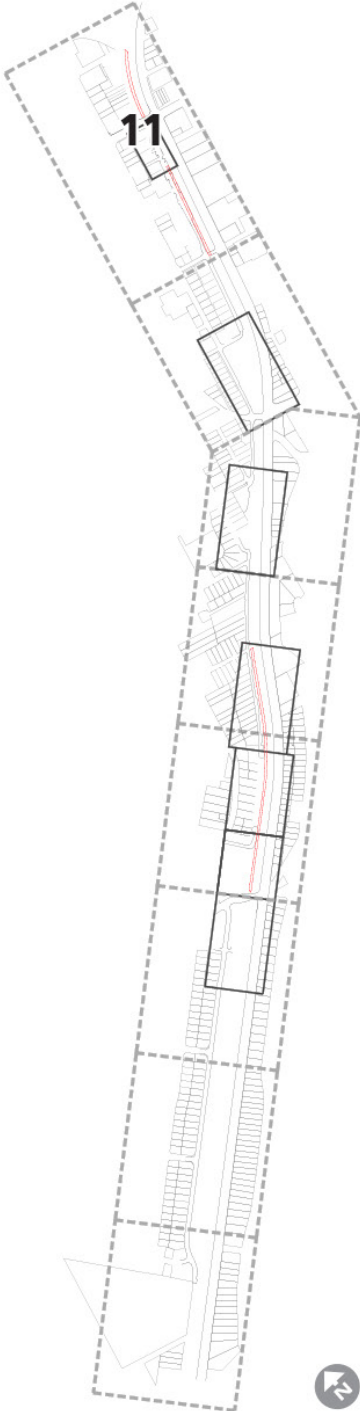


Figure 4-12: Cross-Section - 11

Elevation View



SECTION LOCATION KEY MAP



# 5 | Concept Theming

## 5.1 Project Theming Diagram

The theming of the project is shown on the map below, on the sample character sheets of the following pages and in the gateway concepts that symbolize the theme. Theming will provide visual interest and will provide some order to public art and interpretive panels. The proposed elements will need to display a certain amount of uniqueness through the use of materials, colors, font styles and gateway themes. However, it is also important to help brand the overall trail and park system as something that symbolizes Lemon Grove and that has a certain amount of harmony throughout the corridor. Unifying or harmonizing elements that are important to tie the entire corridor together includes: a name of the trail, the interpretive and wayfinding signage mounting systems (not the message), light posts (not the light fixture), fencing, mile markers (not district theme markers), and roadway / pathway materials for bike and pedestrian use. All other elements should be unique in order to emphasize the theming districts and the gateways that celebrate these local changes.

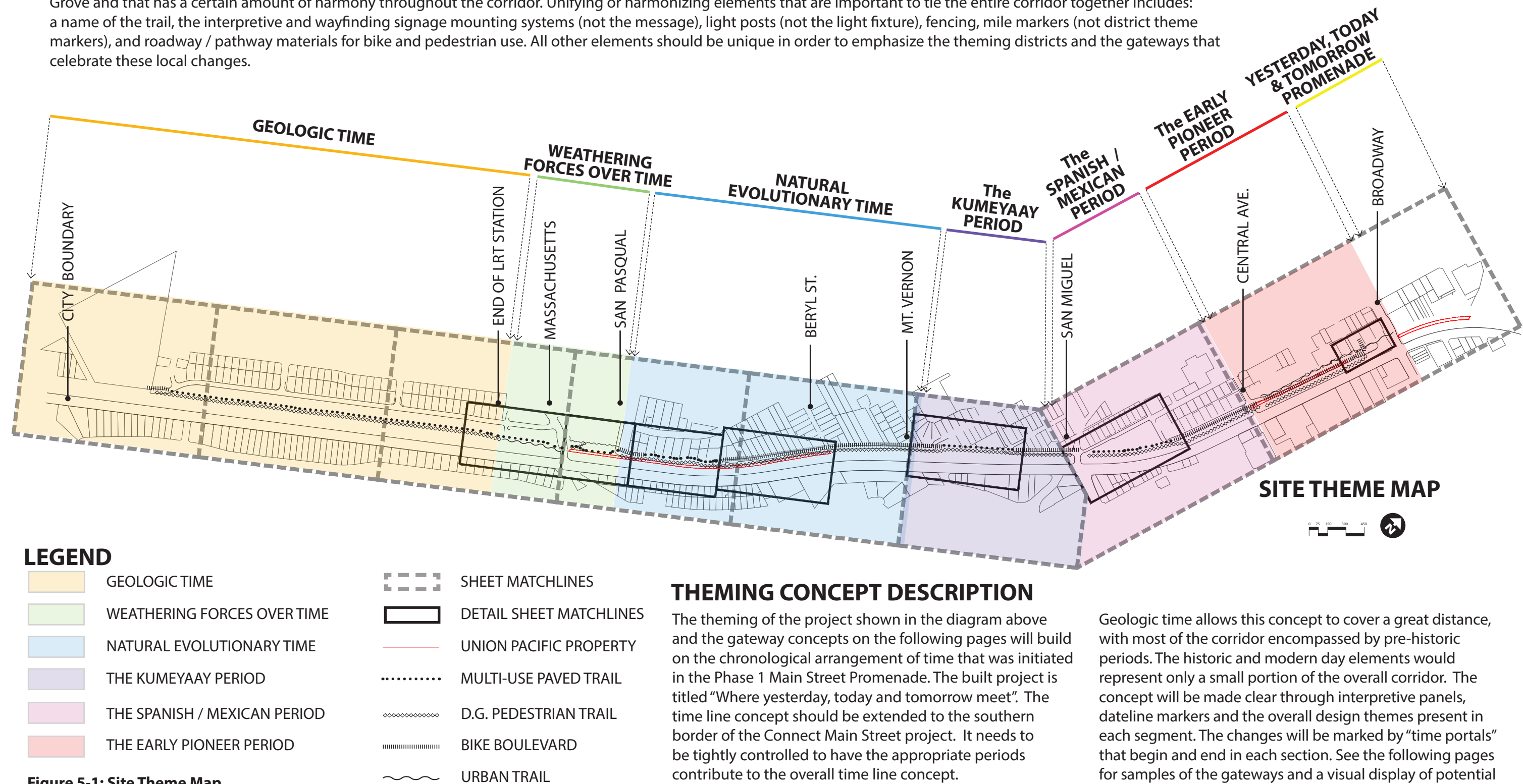
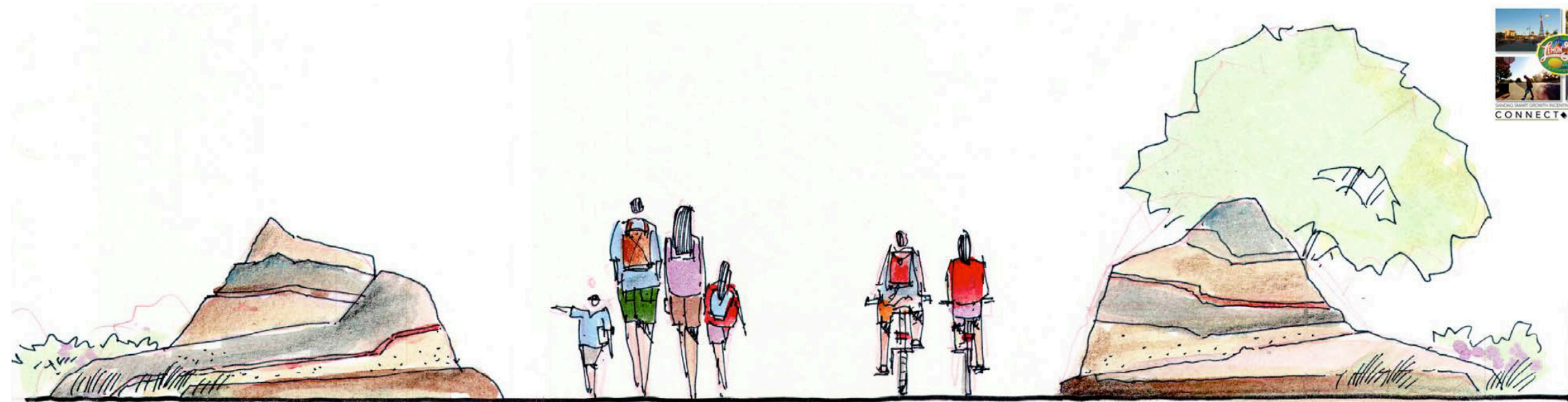


Figure 5-1: Site Theme Map

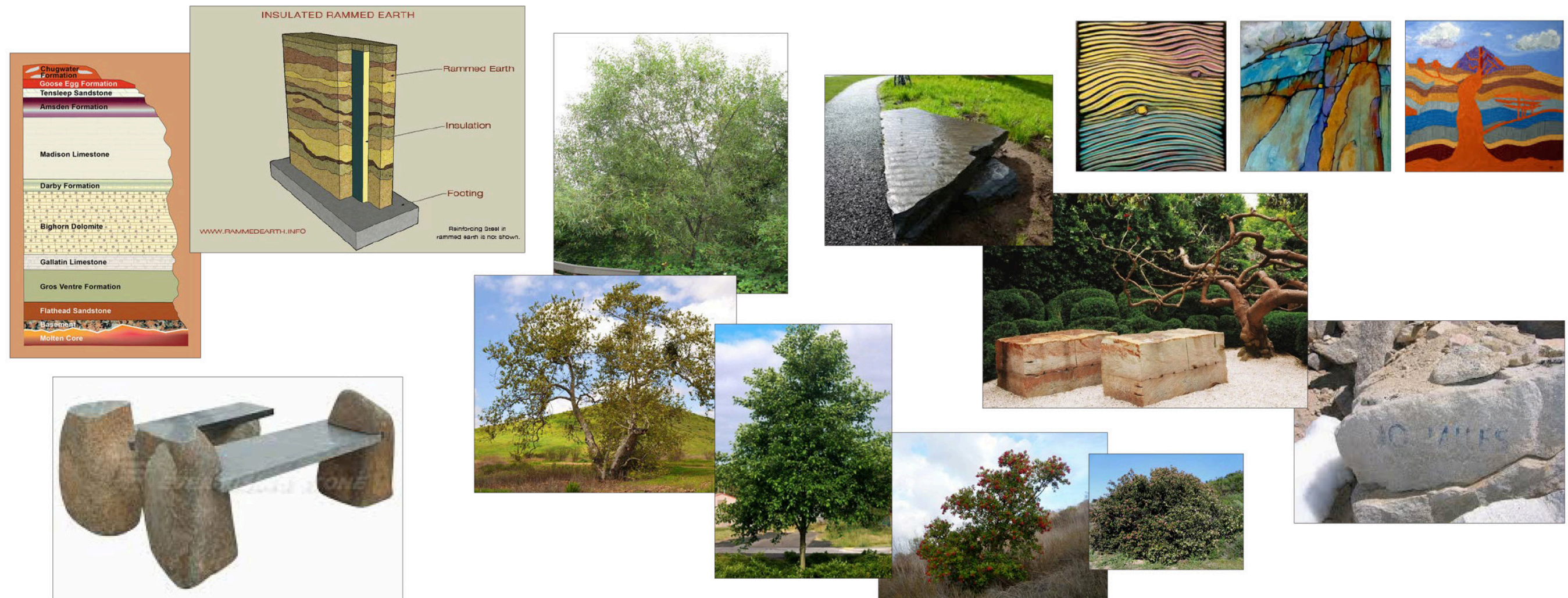


## GEOLOGIC TIME EXAMPLES

The chronology would go back through geologic time with interpretive signs that show the San Diego region (and this site in particular) for its geologic substrate. All elements should be stone, not polished and relate to volcanic, metamorphic or sedimentary geologic categories. Mile markers could be cut stone or boulders with engraved numbers. Benches to be made out of stone.



The portal would consist of a rock wall / sedimentary wall with a triangular shaped high point with layers of geology on each side of the trail as though it were cut through geologic layers



**Figure 5-2: Geologic Time Theme Board** (from the Southern Project Limit to the Massachusetts Trolley Station)

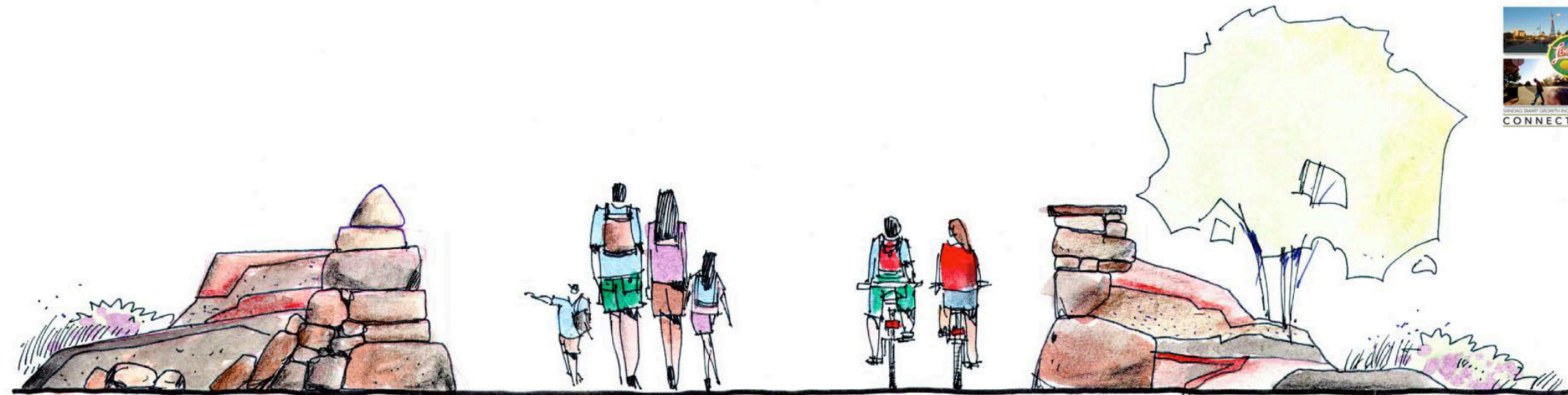


## 5 | Concept Theming

## 5.2 Theme Boards

## WEATHERING FORCES OVER TIME EXAMPLES

The theme of this section is on how wind, temperature and water join to break geologic strata down into surface geology. Materials should be sand, smaller stone, boulders and water or eroded stone surfaces including polished stone or pebble that is shaped by river / water action. Interpretive panels should include weathering processes, erosion, landslides, sloughing, breaking and cracking of the geology, especially from water. Mile markers could be on weathered stone or boulders.



The portal would be similar to the geologic portal except it would look weathered and worn down through erosive forces of wind and water



**Figure 5-3: Weathering Forces Theme Board** (from the Massachusetts Trolley Station to San Pasqual St.)







## 5 | Concept Theming

## 5.2 Theme Boards

## The KUMEYAAY PERIOD EXAMPLES

This area goes from early Native Americans in the region to early 19th century Kumeyaay. Grass huts and grinding stones in the early days evolving to more complex forms of housing and agriculture.



The portal would emphasize the coming of man and its pre-history to history transition and would use thatched arches with stick, limb or trunk pieces



**Figure 5-5: Kumeyaay Theme Board** (from Mt. Vernon St. to San Miguel Ave.)



## The SPANISH/MEXICAN PERIOD EXAMPLES

Spanish and Mexican influences spanned from early Mexican Native Americans to the Spaniards. Stucco, tile, mud thatch, and metal may be appropriate. Mileage markers could be explorer based with compasses, sextons, and other elements added. Mexican and Spanish influences on landscapes includes mission gardens, peppertrees, agave, our lordscandle, etc. for a mostly dry landscape.



The non-native discovery of the Americas would be portrayed through these Spanish and early Mexican influences

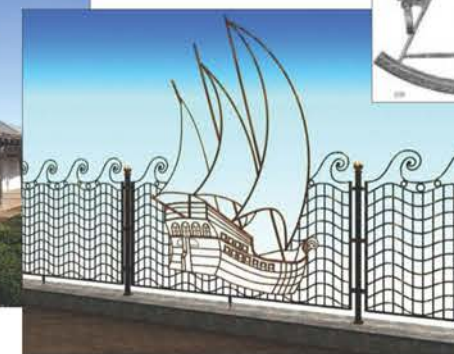
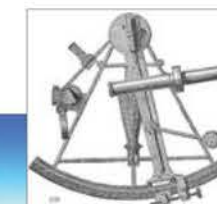
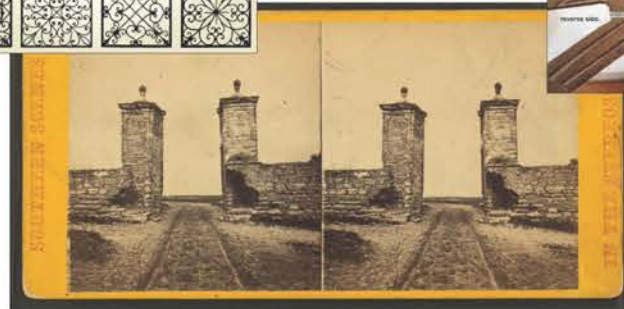
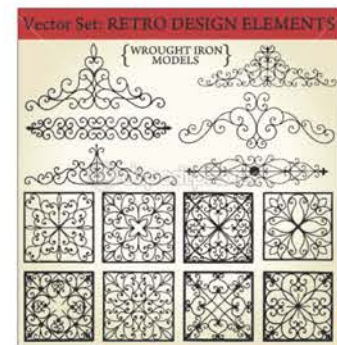


Figure 5-6: Spanish/Mexican Theme Board (from San Miguel Ave. to Central Ave.)



# 5 | Concept Theming

## 5.2 Theme Boards

### The EARLY PIONEER PERIOD EXAMPLES

Arbors, grape vines and shade would be the focus of this area, while keeping an open appearance for storefronts and public safety. Rustic weathered or whitewash wood to be used throughout.



This final portal would consist of an open arbor trellis with grape vines near the lemon monument and would use agricultural lath and include pioneer and agricultural interpretive panels

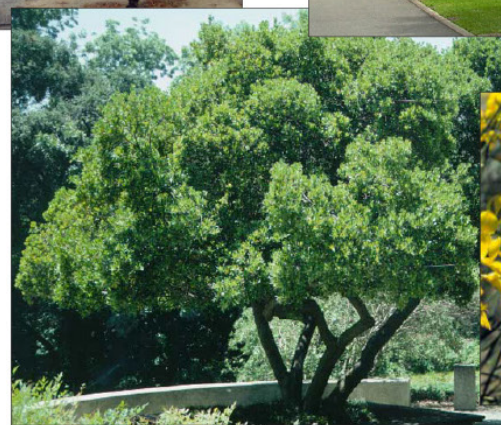


Figure 5-7: Early Pioneer Theme Board (from Central Ave. to Broadway)



## 6 | Concept Plans

### 6.1 Concept Background & Overview

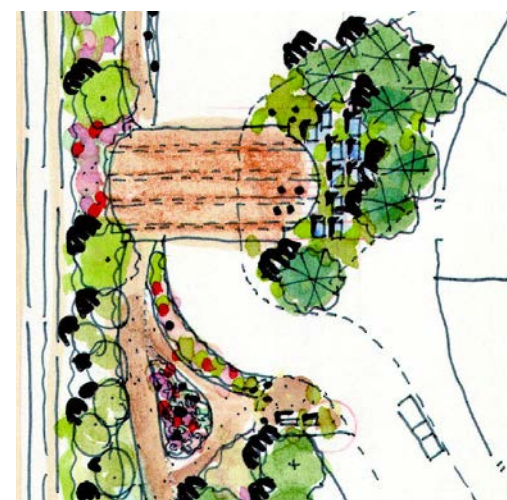
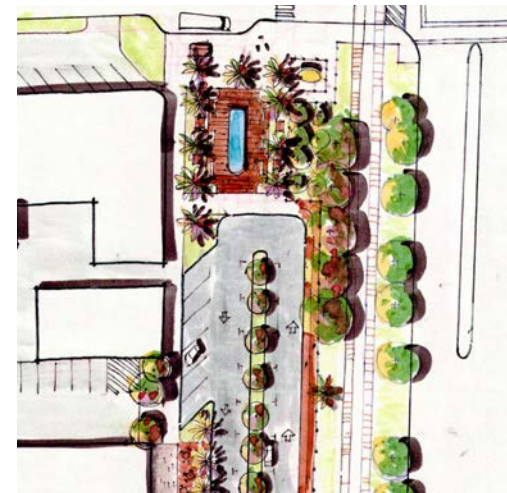
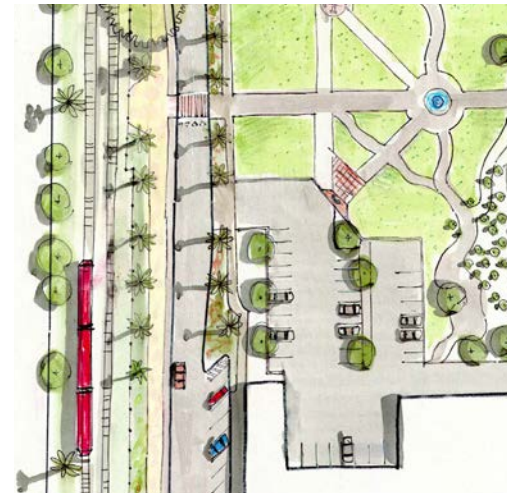
The conceptual plans illustrated on the following pages were the result of many weeks of collaboration between the City of Lemon Grove, the Metropolitan Transit System (MTS), community members, and numerous other stakeholders. Through two community workshops and a technical advisory committee, the design concept was honed and refined from the three alternative concepts originally presented. For more on the design process see Volume I: Design Process. In this final concept, the major design moves include the following features:

#### STREET & TRANSPORTATION MODIFICATIONS

- Closure of Main St. where it intersects Broadway
- Partial closure of Main St. between Olive St. and Burnell. Includes conversion of Main St. to a one-way southbound street.
- Closure of Main St. between Davidson and Buena Vista Avenue
- Closure of Main St. between Massachusetts Avenue and San Pasqual Street
- Closure of parking lot entrance/exit to Massachusetts trolley station
- Relocation of MTS bus stops and associated shelters at Broadway and Massachusetts
- Addition of Decomposed Granite (DG) trail and multi-use asphalt trail along most of the length of the project corridor

#### PUBLIC SPACES & AMENITIES

- New public plaza space and art at the intersection of Broadway and Main St.
- Improvements to Civic Center Park and addition of tot-lot
- Interpretive Spanish-era space with associated community garden at the intersection of Main & Olive St.
- Park with play spaces, a community garden, par-course equipment, and interpretive art at the closure of Main St. between Davidson and Buena Vista Ave.
- Park, picnicking, dog park, play, and exercise areas along the proposed trail system between Mt. Vernon St. and San Pasqual St.
- Park with bouldering area and skate park between San Pasqual and Massachusetts
- Picnic area with horseshoe/bocce court at the intersection of Alberdi Drive and San Altos Pl.

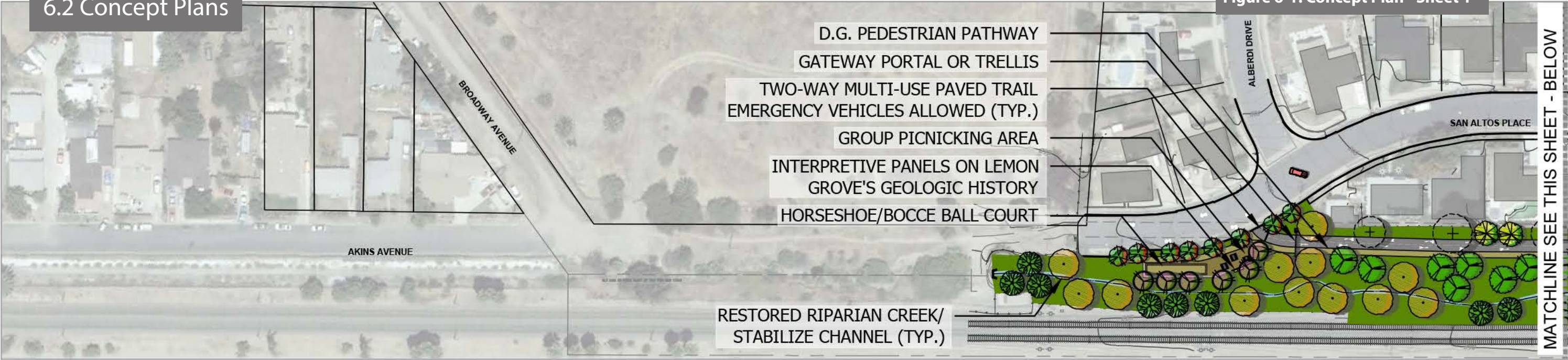


Samples of conceptual sketches used to discuss the project with the public at the second workshop.

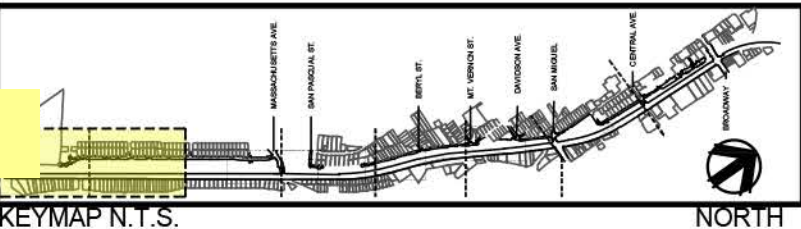
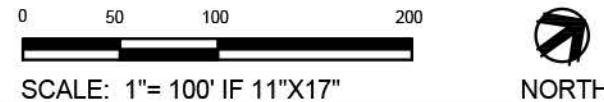


6.2 Concept Plans

Figure 6-1: Concept Plan - Sheet 1



SHEET 1: PLAN VIEW



TREE SUCH AS LEGEND:

- |  |   |   |
|--|---|---|
| Ironwood - <i>Lyonothamnus floribundus</i><br>Torrey Pine - <i>Pinus torreyana</i>   | CA Sycamore - <i>Platanus racemosa</i><br>Bay Laurel - <i>Umbellularia californica</i>  | Date Palm - <i>Phoenix dactylifera</i><br>Existing Tree |
| Western Redbud - <i>Cercis occidentalis</i><br>Crape Myrtle - <i>Lagerstroemia indica</i><br>Bronze Loquat - <i>Eriobotrya deflexa</i> | Brisbane Box - <i>Lophostemon confertus</i><br>Peppermint Tree - <i>Agonis flexuosa</i><br>Ornamental Pear - <i>Pyrus species</i> | Existing Palm   |
| CA Live Oak - <i>Quercus agrifolia</i><br>Valley Oak - <i>Quercus lobata</i><br>Island Oak - <i>Quercus tomentella</i>                 | Common Alder - <i>Alnus rhombifolia</i><br>Willow - <i>Salix species</i><br>Elderberry - <i>Sambucus mexicana</i>                 |   |

SIGN LEGEND:

- ① Stop Sign
- ② Stop & No Right Turn
- ③ Stop & Right Turn Only
- ④ Bus/Bike Only
- ⑤ Yield to Pedestrians
- ⑥ Do Not Enter One Way
- ⑦ Security Camera
- ⑧ Bike Stop Sign

SITE LEGEND:

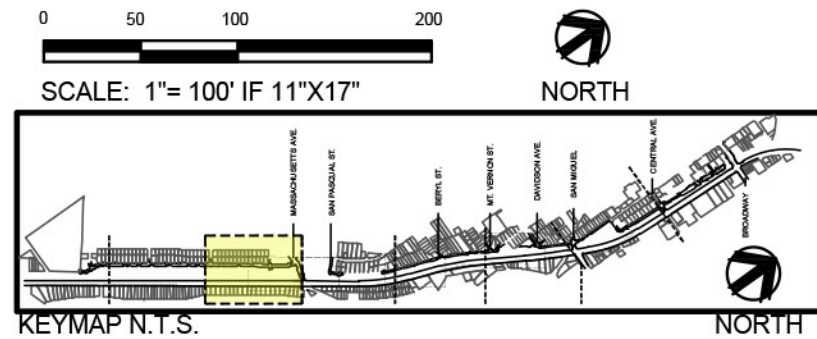
- Union Pacific Property
- Bike Boulevard Markings
- ADA Ramp
- Boulders
- Sit-Only Bench
- Interpretive Sign



Figure 6-2: Concept Plan - Sheet 2



SHEET 2: PLAN VIEW



TREE SUCH AS LEGEND:

- Ironwood - *Lyonothamnus floribundus*
- Torrey Pine - *Pinus torreyana*
- CA Sycamore - *Platanus racemosa*
- Bay Laurel - *Umbellularia californica*
- Western Redbud - *Cercis occidentalis*
- Crape Myrtle - *Lagerstroemia indica*
- Bronze Loquat - *Eriobotrya deflexa*
- CA Live Oak - *Quercus agrifolia*
- Valley Oak - *Quercus lobata*
- Island Oak - *Quercus tomentella*
- Brisbane Box - *Lophostemon confertus*
- Peppermint Tree - *Agonis flexuosa*
- Ornamental Pear - *Pyrus species*
- Common Alder - *Alnus rhombifolia*
- Willow - *Salix species*
- Elderberry - *Sambucus mexicana*
- Date Palm - *Phoenix dactylifera*
- Existing Tree
- Existing Palm

SIGN LEGEND:

- ① Stop Sign
- ② Stop & No Right Turn
- ③ Stop & Right Turn Only
- ④ Bus/Bike Only
- ⑤ Yield to Pedestrians
- ⑥ Do Not Enter One Way
- ⑦ Security Camera
- ⑧ Bike Stop Sign

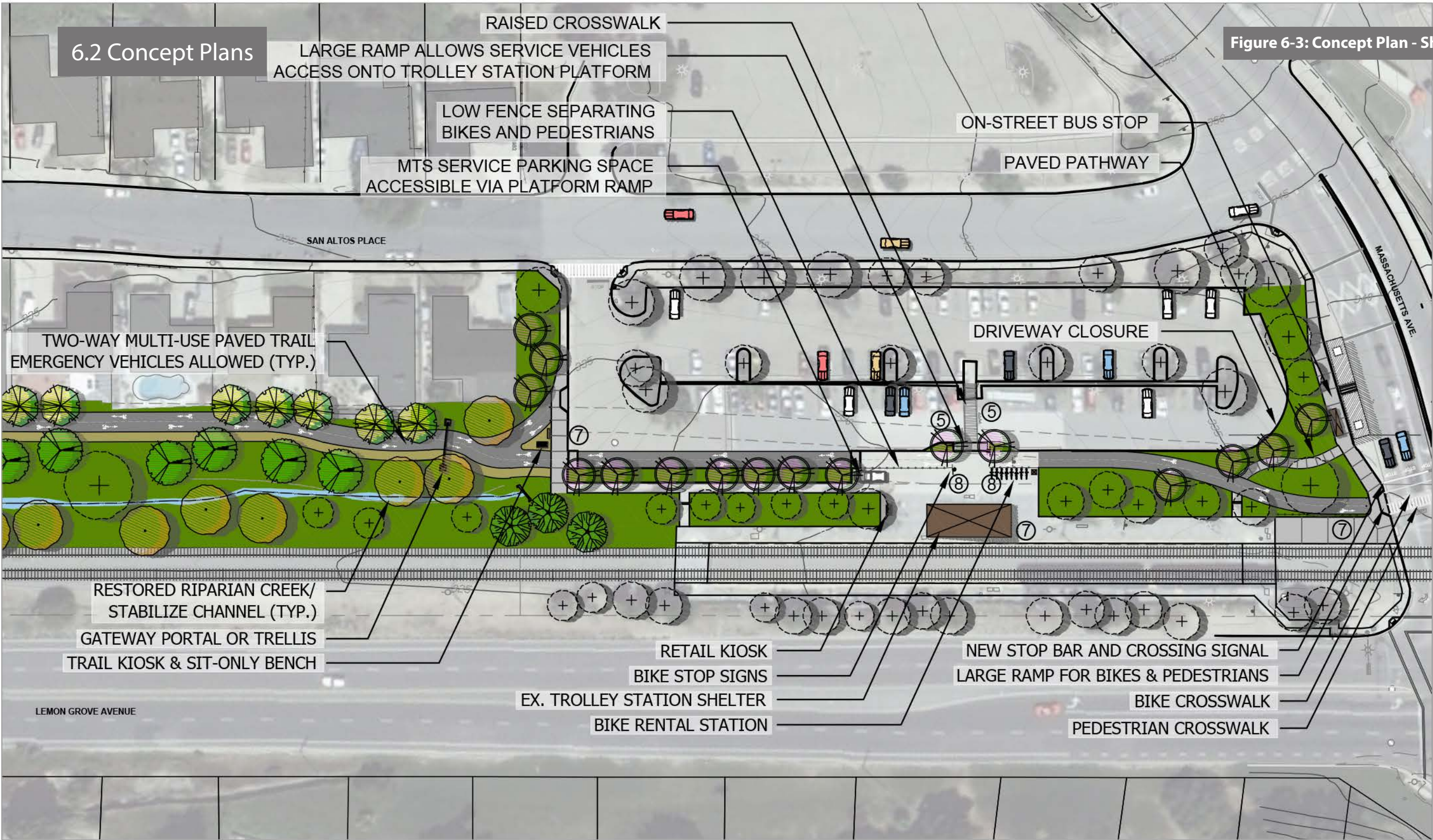
SITE LEGEND:

- Union Pacific Property
- Bike Boulevard Markings
- ADA Ramp
- Boulders
- Sit-Only Bench
- Interpretive Sign

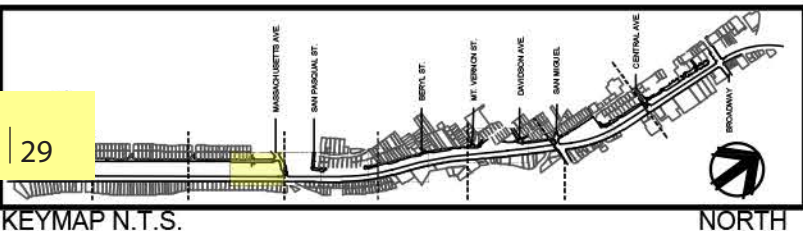


6.2 Concept Plans

Figure 6-3: Concept Plan - Sheet 3



SHEET 2A: DETAIL PLAN



TREE SUCH AS LEGEND:

- Ironwood - *Lyonothamnus floribundus*
- Torrey Pine - *Pinus torreyana*
- CA Sycamore - *Platanus racemosa*
- Bay Laurel - *Umbellularia californica*
- Western Redbud - *Cercis occidentalis*
- Crape Myrtle - *Lagerstroemia indica*
- Bronze Loquat - *Eriobotrya deflexa*
- CA Live Oak - *Quercus agrifolia*
- Valley Oak - *Quercus lobata*
- Island Oak - *Quercus tomentella*
- Brisbane Box - *Lophostemon confertus*
- Peppermint Tree - *Agonis flexuosa*
- Ornamental Pear - *Pyrus species*
- Common Alder - *Alnus rhombifolia*
- Willow - *Salix species*
- Elderberry - *Sambucus mexicana*
- Date Palm - *Phoenix dactylifera*
- Existing Tree
- Existing Palm

SIGN LEGEND:

- ① Stop Sign
- ② Stop & No Right Turn
- ③ Stop & Right Turn Only
- ④ Bus/Bike Only
- ⑤ Yield to Pedestrians
- ⑥ Do Not Enter One Way
- ⑦ Security Camera
- ⑧ Bike Stop Sign

SITE LEGEND:

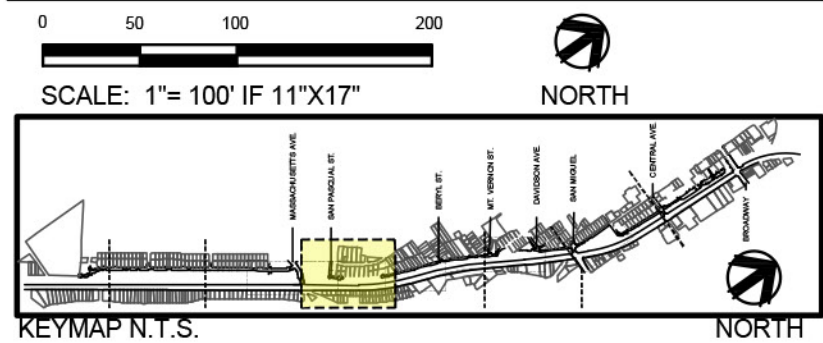
- Union Pacific Property
- Bike Boulevard Markings
- ADA Ramp
- Boulders
- Sit-Only Bench
- Interpretive Sign



Figure 6-4: Concept Plan - Sheet 4



SHEET 3: PLAN VIEW



TREE SUCH AS LEGEND:

- |  |   |
|--|---|
| Ironwood - <i>Lyonothamnus floribundus</i><br>Torrey Pine - <i>Pinus torreyana</i>   | CA Sycamore - <i>Platanus racemosa</i><br>Bay Laurel - <i>Umbellularia californica</i>  |
| Western Redbud - <i>Cercis occidentalis</i><br>Crape Myrtle - <i>Lagerstroemia indica</i><br>Bronze Loquat - <i>Eriobotrya deflexa</i> | Brisbane Box - <i>Lophostemon confertus</i><br>Peppermint Tree - <i>Agonis flexuosa</i><br>Ornamental Pear - <i>Pyrus species</i> |
| CA Live Oak - <i>Quercus agrifolia</i><br>Valley Oak - <i>Quercus lobata</i><br>Island Oak - <i>Quercus tomentella</i>                 | Common Alder - <i>Alnus rhombifolia</i><br>Willow - <i>Salix species</i><br>Elderberry - <i>Sambucus mexicana</i>                 |

SIGN LEGEND:

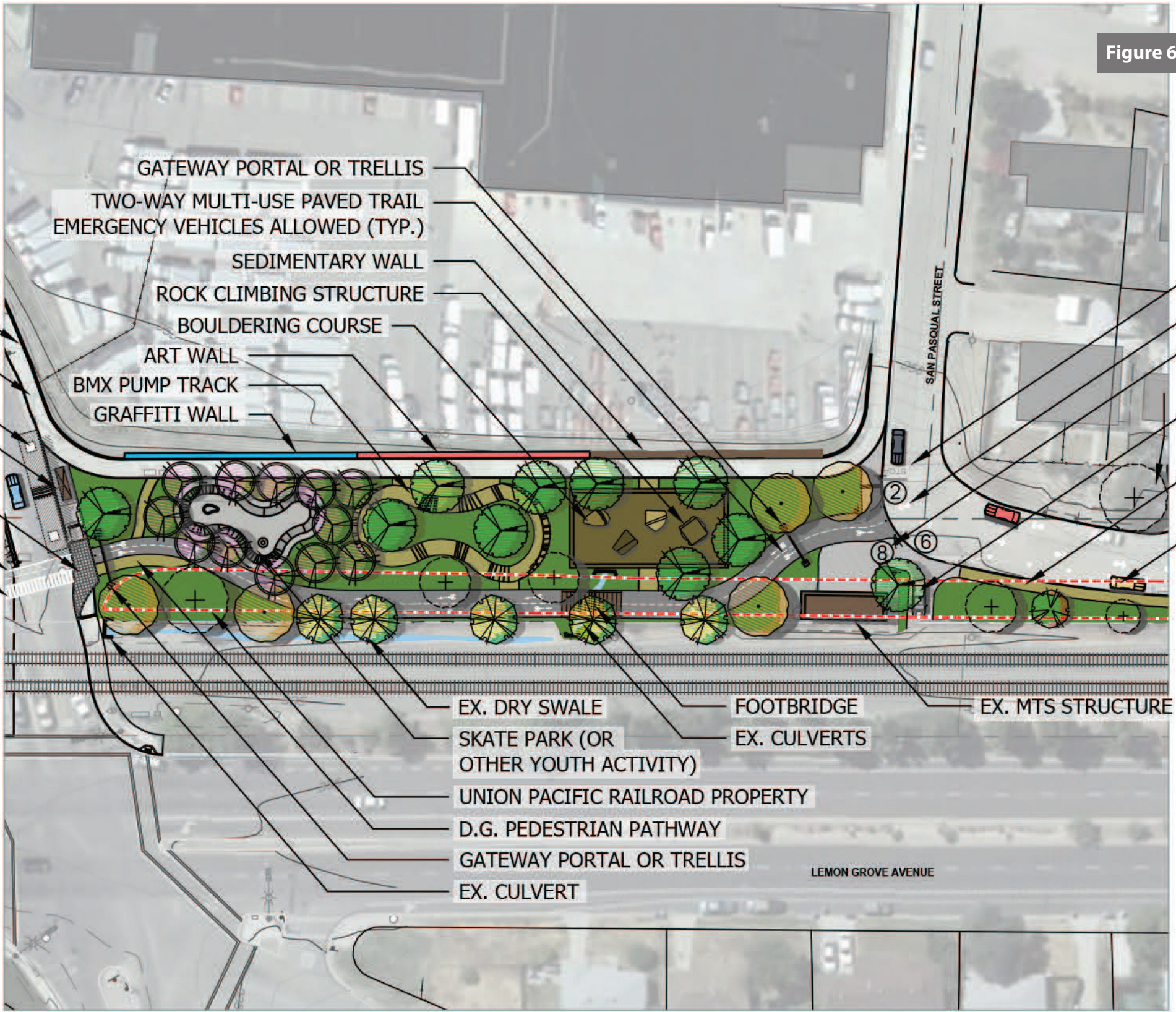
- |   |                        |
|---|------------------------|
| ① | Stop Sign              |
| ② | Stop & No Right Turn   |
| ③ | Stop & Right Turn Only |
| ④ | Bus/Bike Only          |
| ⑤ | Yield to Pedestrians   |
| ⑥ | Do Not Enter One Way   |
| ⑦ | Security Camera        |
| ⑧ | Bike Stop Sign         |

SITE LEGEND:

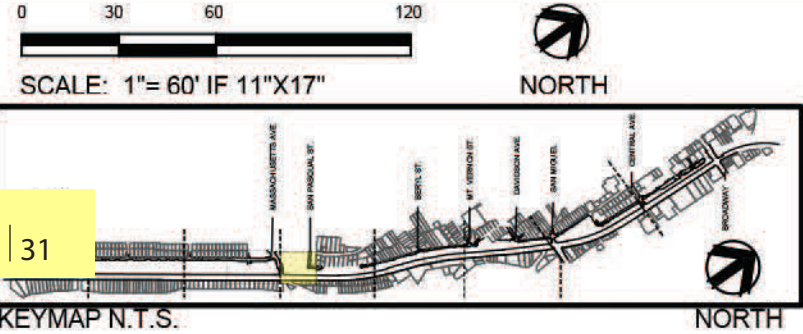
- |  |                         |
|--|-------------------------|
|  | Union Pacific Property  |
|  | Bike Boulevard Markings |
|  | ADA Ramp                |
|  | Boulders                |
|  | Sit-Only Bench          |
|  | Interpretive Sign       |



Figure 6-5: Concept Plan - Sheet 5



SHEET 3A: DETAIL PLAN - Alt 1



TREE SUCH AS LEGEND:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>Ironwood - <i>Lyonothamnus floribundus</i></li> <li>Torrey Pine - <i>Pinus torreyana</i></li> <li>Western Redbud - <i>Cercis occidentalis</i></li> <li>Crape Myrtle - <i>Lagerstroemia indica</i></li> <li>Bronze Loquat - <i>Eriobotrya deflexa</i></li> <li>CA Live Oak - <i>Quercus agrifolia</i></li> <li>Valley Oak - <i>Quercus lobata</i></li> <li>Island Oak - <i>Quercus tomentella</i></li> </ul> | <ul style="list-style-type: none"> <li>CA Sycamore - <i>Platanus racemosa</i></li> <li>Bay Laurel - <i>Umbellularia californica</i></li> <li>Brisbane Box - <i>Lophostemon confertus</i></li> <li>Peppermint Tree - <i>Agonis flexuosa</i></li> <li>Ornamental Pear - <i>Pyrus species</i></li> <li>Common Alder - <i>Alnus rhombifolia</i></li> <li>Willow - <i>Salix species</i></li> <li>Elderberry - <i>Sambucus mexicana</i></li> </ul> |
|--|--|

SIGN LEGEND:

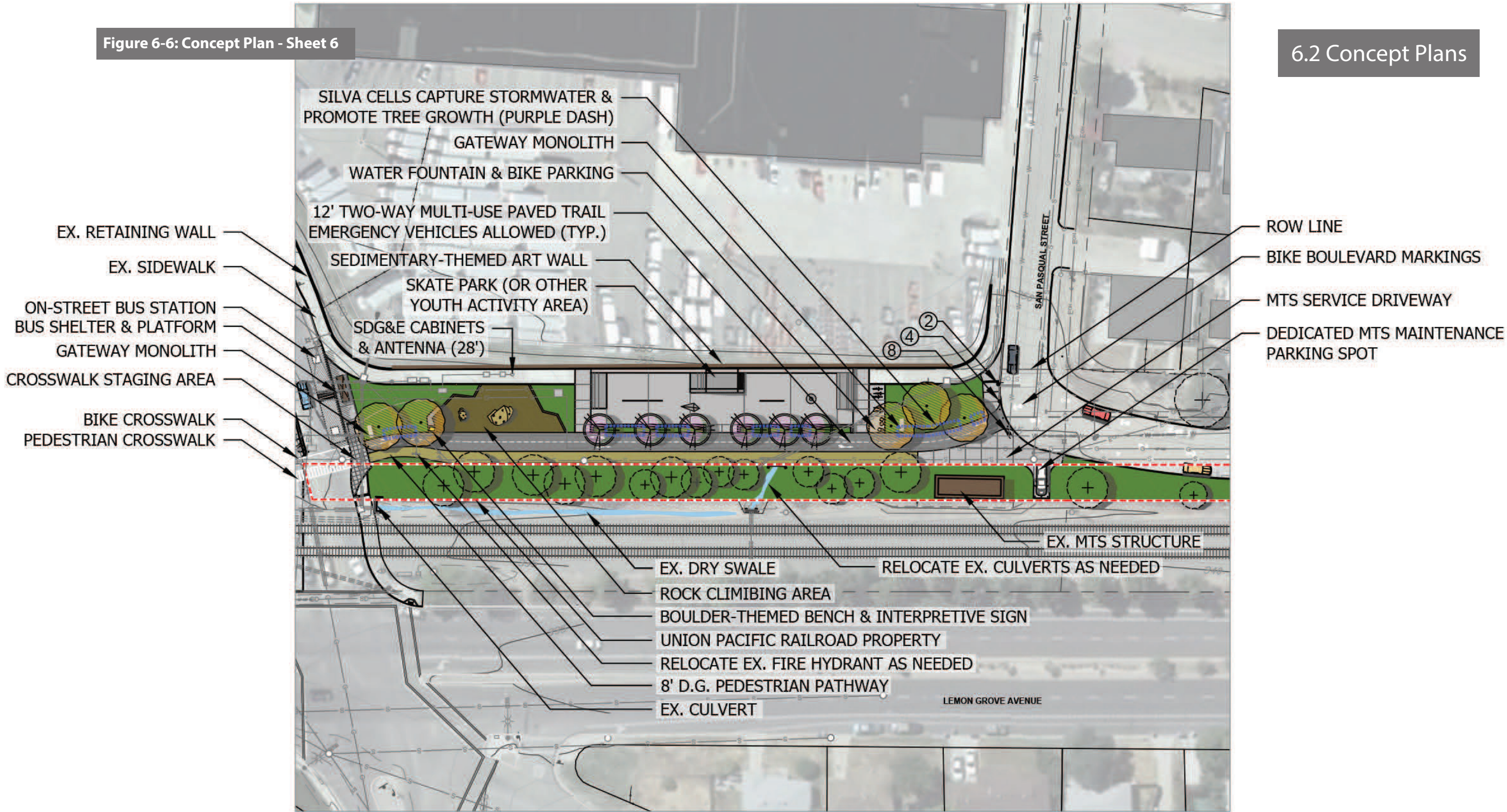
- ① Stop Sign
- ② Stop & No Right Turn
- ③ Stop & Right Turn Only
- ④ Bus/Bike Only
- ⑤ Yield to Pedestrians
- ⑥ Do Not Enter One Way
- ⑦ Security Camera
- ⑧ Bike Stop Sign

SITE LEGEND:

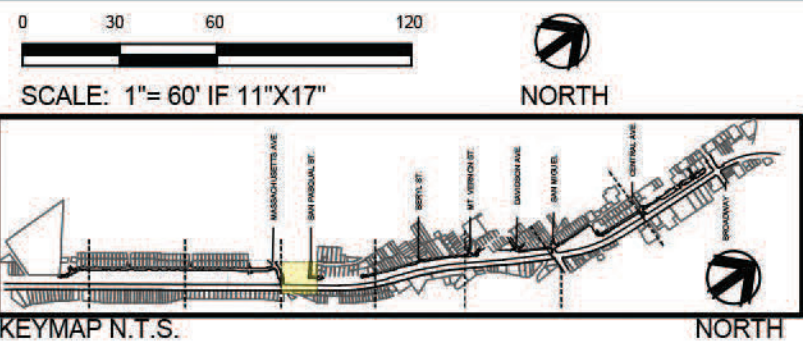
- Union Pacific Property
- Bike Boulevard Markings
- ADA Ramp
- Boulders
- Sit-Only Bench
- Interpretive Sign



Figure 6-6: Concept Plan - Sheet 6



SHEET 3A: DETAIL PLAN - Alt 2



TREE SUCH AS LEGEND:

- |   |  |
|---|--|
| Ironwood - <i>Lyonothamnus floribundus</i>  | CA Sycamore - <i>Platanus racemosa</i>       |
| Torrey Pine - <i>Pinus torreyana</i>        | Bay Laurel - <i>Umbellularia californica</i> |
| Western Redbud - <i>Cercis occidentalis</i> | Brisbane Box - <i>Lophostemon confertus</i>  |
| Crape Myrtle - <i>Lagerstroemia indica</i>  | Peppermint Tree - <i>Agonis flexuosa</i>     |
| Bronze Loquat - <i>Eriobotrya deflexa</i>   | Ornamental Pear - <i>Pyrus species</i>       |
| CA Live Oak - <i>Quercus agrifolia</i>      | Common Alder - <i>Alnus rhombifolia</i>      |
| Valley Oak - <i>Quercus lobata</i>          | Willow - <i>Salix species</i>                |
| Island Oak - <i>Quercus tomentella</i>      | Elderberry - <i>Sambucus mexicana</i>        |

SIGN LEGEND:

- |   |                        |
|---|------------------------|
| ① | Stop Sign              |
| ② | Stop & No Right Turn   |
| ③ | Stop & Right Turn Only |
| ④ | Bus/Bike Only          |
| ⑤ | Yield to Pedestrians   |
| ⑥ | Do Not Enter One Way   |
| ⑦ | Security Camera        |
| ⑧ | Bike Stop Sign         |

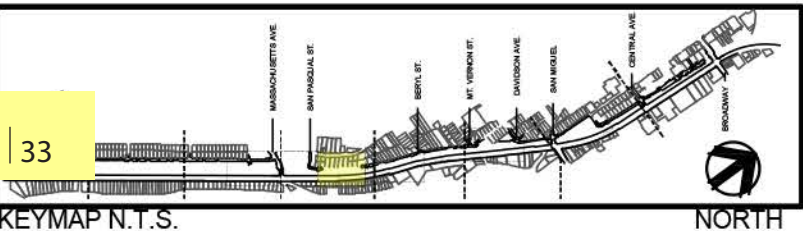
SITE LEGEND:

- |  |                         |
|--|-------------------------|
|  | Union Pacific Property  |
|  | Bike Boulevard Markings |
|  | ADA Ramp                |
|  | Boulders                |
|  | Sit-Only Bench          |
|  | Interpretive Sign       |





SHEET 3B: DETAIL PLAN



KEYMAP N.T.S.

TREE SUCH AS LEGEND:

- |   |  |
|---|--|
| Ironwood - <i>Lyonothamnus floribundus</i>  | CA Sycamore - <i>Platanus racemosa</i>       |
| Torrey Pine - <i>Pinus torreyana</i>        | Bay Laurel - <i>Umbellularia californica</i> |
| Western Redbud - <i>Cercis occidentalis</i> | Brisbane Box - <i>Lophostemon confertus</i>  |
| Crape Myrtle - <i>Lagerstroemia indica</i>  | Peppermint Tree - <i>Agonis flexuosa</i>     |
| Bronze Loquat - <i>Eriobotrya deflexa</i>   | Ornamental Pear - <i>Pyrus species</i>       |
| CA Live Oak - <i>Quercus agrifolia</i>      | Common Alder - <i>Alnus rhombifolia</i>      |
| Valley Oak - <i>Quercus lobata</i>          | Willow - <i>Salix species</i>                |
| Island Oak - <i>Quercus tomentella</i>      | Elderberry - <i>Sambucus mexicana</i>        |

SIGN LEGEND:

- |   |                        |
|---|------------------------|
| ① | Stop Sign              |
| ② | Stop & No Right Turn   |
| ③ | Stop & Right Turn Only |
| ④ | Bus/Bike Only          |
| ⑤ | Yield to Pedestrians   |
| ⑥ | Do Not Enter One Way   |
| ⑦ | Security Camera        |
| ⑧ | Bike Stop Sign         |

SITE LEGEND:

- |  |                         |
|--|-------------------------|
|  | Union Pacific Property  |
|  | Bike Boulevard Markings |
|  | ADA Ramp                |
|  | Boulders                |
|  | Sit-Only Bench          |
|  | Interpretive Sign       |



MATCHLINE SEE SHEET 3

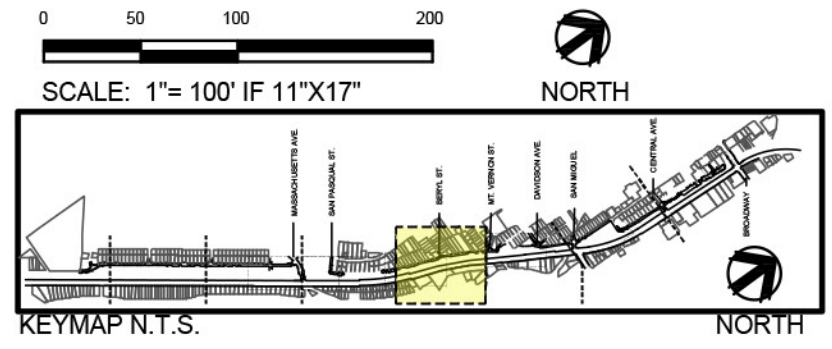
Figure 6-8: Concept Plan - Sheet 8

6.2 Concept Plans

MATCHLINE SEE SHEET 4



SHEET 4: PLAN VIEW



TREE SUCH AS LEGEND:

- |   |  |  |
|---|--|--|
| Ironwood - <i>Lyonothamnus floribundus</i>  | CA Sycamore - <i>Platanus racemosa</i>       | Date Palm - <i>Phoenix dactylifera</i> |
| Torrey Pine - <i>Pinus torreyana</i>        | Bay Laurel - <i>Umbellularia californica</i> | Existing Tree                          |
| Western Redbud - <i>Cercis occidentalis</i> | Brisbane Box - <i>Lophostemon confertus</i>  | Existing Palm                          |
| Crape Myrtle - <i>Lagerstroemia indica</i>  | Peppermint Tree - <i>Agonis flexuosa</i>     |  |
| Bronze Loquat - <i>Eriobotrya deflexa</i>   | Ornamental Pear - <i>Pyrus species</i>       |  |
| CA Live Oak - <i>Quercus agrifolia</i>      | Common Alder - <i>Alnus rhombifolia</i>      |  |
| Valley Oak - <i>Quercus lobata</i>          | Willow - <i>Salix species</i>                |  |
| Island Oak - <i>Quercus tomentella</i>      | Elderberry - <i>Sambucus mexicana</i>        |  |

SIGN LEGEND:

- ① Stop Sign
- ② Stop & No Right Turn
- ③ Stop & Right Turn Only
- ④ Bus/Bike Only
- ⑤ Yield to Pedestrians
- ⑥ Do Not Enter One Way
- ⑦ Security Camera
- ⑧ Bike Stop Sign

SITE LEGEND:

- Union Pacific Property
- Bike Boulevard Markings
- ADA Ramp
- Boulders
- Sit-Only Bench
- Interpretive Sign



6.2 Concept Plans

Figure 6-9: Concept Plan - Sheet 9

CHILDREN'S ADVENTURE  
COURSE & SAND LOT

BALANCE AND  
AGILITY COURSE

HOPPING/CLIMBING  
BOULDERS

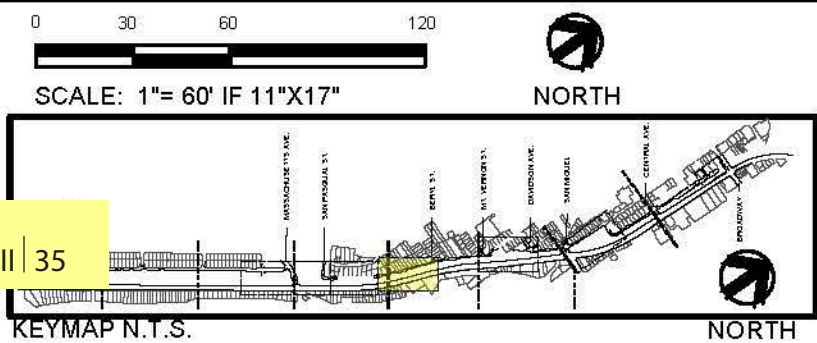


SHEET 4A: DETAIL PLAN

TREE SUCH AS LEGEND:

SIGN LEGEND:

SITE LEGEND:



- |   |  |  |
|---|--|--|
| Ironwood - <i>Lyonothamnus floribundus</i>  | CA Sycamore - <i>Platanus racemosa</i>       | Date Palm - <i>Phoenix dactylifera</i> |
| Torrey Pine - <i>Pinus torreyana</i>        | Bay Laurel - <i>Umbellularia californica</i> | Existing Tree                          |
| Western Redbud - <i>Cercis occidentalis</i> | Brisbane Box - <i>Lophostemon confertus</i>  | Existing Palm                          |
| Crape Myrtle - <i>Lagerstroemia indica</i>  | Peppermint Tree - <i>Agonis flexuosa</i>     |  |
| Bronze Loquat - <i>Eriobotrya deflexa</i>   | Ornamental Pear - <i>Pyrus species</i>       |  |
| CA Live Oak - <i>Quercus agrifolia</i>      | Common Alder - <i>Alnus rhombifolia</i>      |  |
| Valley Oak - <i>Quercus lobata</i>          | Willow - <i>Salix species</i>                |  |
| Island Oak - <i>Quercus tomentella</i>      | Elderberry - <i>Sambucus mexicana</i>        |  |

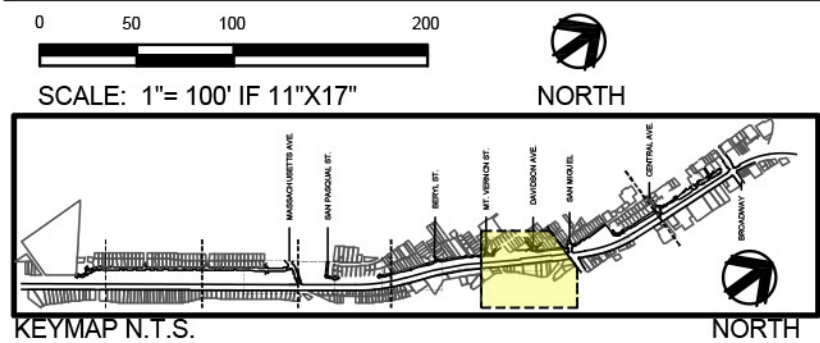
- |                          |                         |
|--------------------------|-------------------------|
| ① Stop Sign              | Union Pacific Property  |
| ② Stop & No Right Turn   | Bike Boulevard Markings |
| ③ Stop & Right Turn Only | ADA Ramp                |
| ④ Bus/Bike Only          | Boulders                |
| ⑤ Yield to Pedestrians   | Sit-Only Bench          |
| ⑥ Do Not Enter One Way   | Interpretive Sign       |
| ⑦ Security Camera        |                         |
| ⑧ Bike Stop Sign         |                         |



Figure 6-10: Concept Plan - Sheet 10



SHEET 5: PLAN VIEW



TREE SUCH AS LEGEND:

- |  |   |
|--|---|
| Ironwood - <i>Lyonothamnus floribundus</i><br>Torrey Pine - <i>Pinus torreyana</i>   | CA Sycamore - <i>Platanus racemosa</i><br>Bay Laurel - <i>Umbellularia californica</i>  |
| Western Redbud - <i>Cercis occidentalis</i><br>Crape Myrtle - <i>Lagerstroemia indica</i><br>Bronze Loquat - <i>Eriobotrya deflexa</i> | Brisbane Box - <i>Lophostemon confertus</i><br>Peppermint Tree - <i>Agonis flexuosa</i><br>Ornamental Pear - <i>Pyrus species</i> |
| CA Live Oak - <i>Quercus agrifolia</i><br>Valley Oak - <i>Quercus lobata</i><br>Island Oak - <i>Quercus tomentella</i>                 | Common Alder - <i>Alnus rhombifolia</i><br>Willow - <i>Salix species</i><br>Elderberry - <i>Sambucus mexicana</i>                 |

SIGN LEGEND:

- |   |                        |
|---|------------------------|
| ① | Stop Sign              |
| ② | Stop & No Right Turn   |
| ③ | Stop & Right Turn Only |
| ④ | Bus/Bike Only          |
| ⑤ | Yield to Pedestrians   |
| ⑥ | Do Not Enter One Way   |
| ⑦ | Security Camera        |
| ⑧ | Bike Stop Sign         |

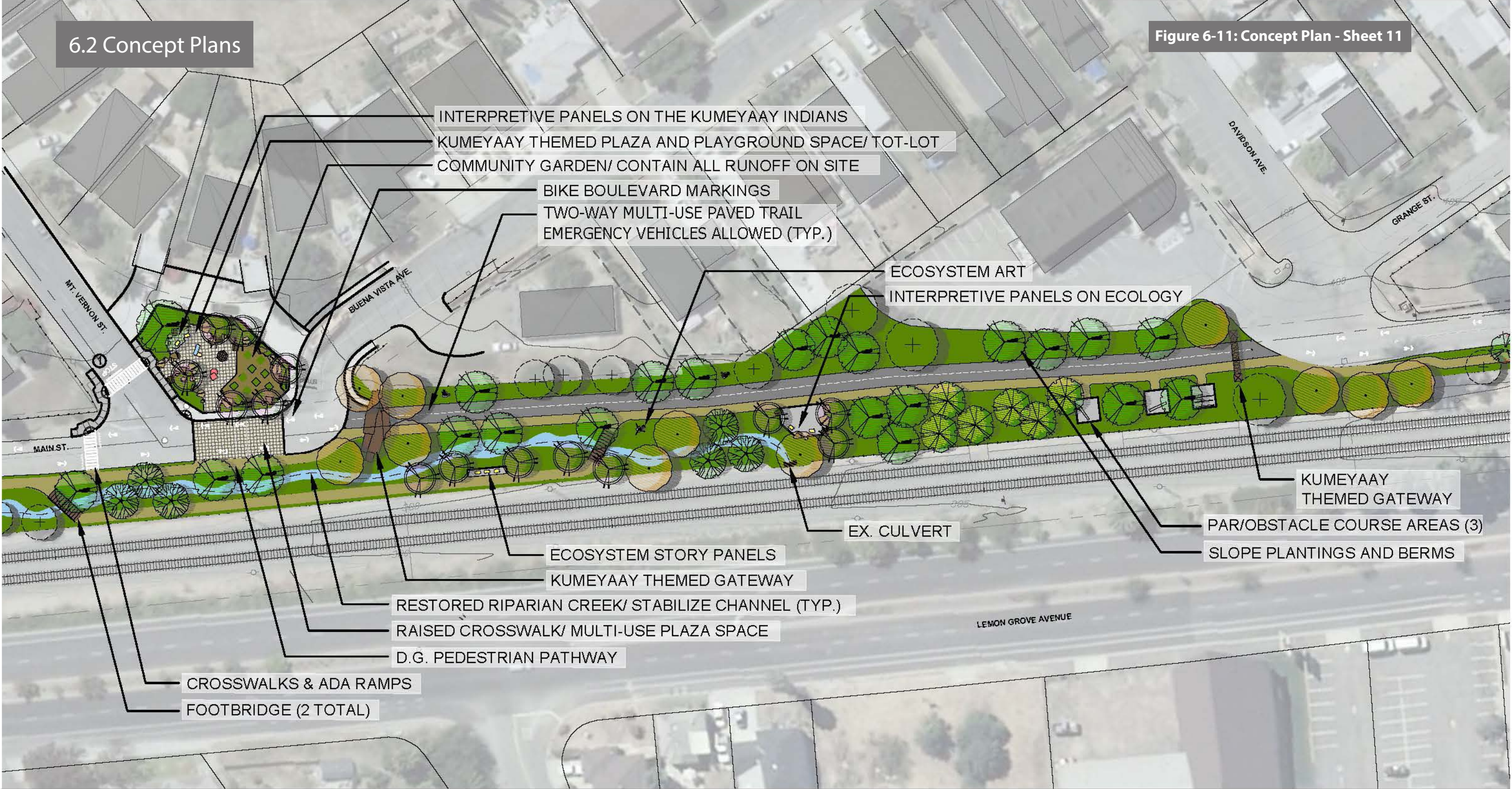
SITE LEGEND:

- |  |                         |
|--|-------------------------|
|  | Union Pacific Property  |
|  | Bike Boulevard Markings |
|  | ADA Ramp                |
|  | Boulders                |
|  | Sit-Only Bench          |
|  | Interpretive Sign       |

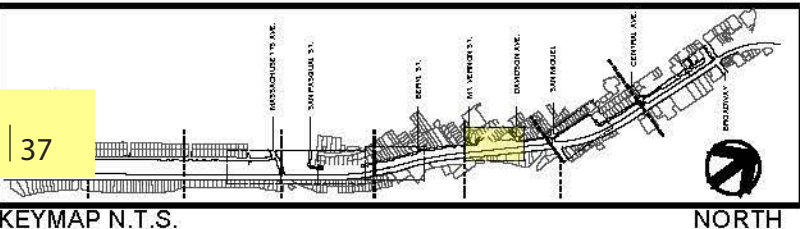


6.2 Concept Plans

Figure 6-11: Concept Plan - Sheet 11



SHEET 5A: DETAIL PLAN



TREE SUCH AS LEGEND:

- |  |   |   |
|--|---|---|
| Ironwood - <i>Lyonothamnus floribundus</i><br>Torrey Pine - <i>Pinus torreyana</i>   | CA Sycamore - <i>Platanus racemosa</i><br>Bay Laurel - <i>Umbellularia californica</i>  | Date Palm - <i>Phoenix dactylifera</i><br>Existing Tree |
| Western Redbud - <i>Cercis occidentalis</i><br>Crape Myrtle - <i>Lagerstroemia indica</i><br>Bronze Loquat - <i>Eriobotrya deflexa</i> | Brisbane Box - <i>Lophostemon confertus</i><br>Peppermint Tree - <i>Agonis flexuosa</i><br>Ornamental Pear - <i>Pyrus species</i> | Existing Palm   |
| CA Live Oak - <i>Quercus agrifolia</i><br>Valley Oak - <i>Quercus lobata</i><br>Island Oak - <i>Quercus tomentella</i>                 | Common Alder - <i>Alnus rhombifolia</i><br>Willow - <i>Salix species</i><br>Elderberry - <i>Sambucus mexicana</i>                 |   |

SIGN LEGEND:

- |   |                        |
|---|------------------------|
| ① | Stop Sign              |
| ② | Stop & No Right Turn   |
| ③ | Stop & Right Turn Only |
| ④ | Bus/Bike Only          |
| ⑤ | Yield to Pedestrians   |
| ⑥ | Do Not Enter One Way   |
| ⑦ | Security Camera        |
| ⑧ | Bike Stop Sign         |

SITE LEGEND:

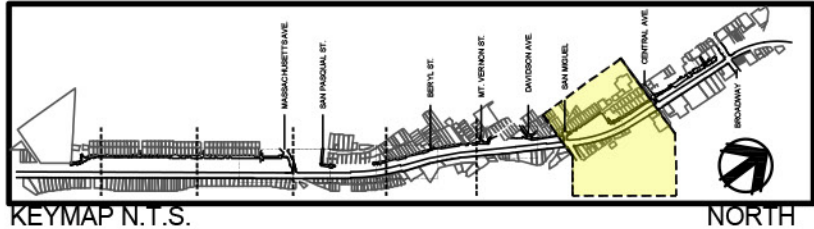
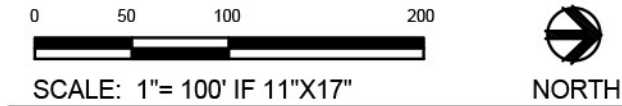
- |  |                         |
|--|-------------------------|
|  | Union Pacific Property  |
|  | Bike Boulevard Markings |
|  | ADA Ramp                |
|  | Boulders                |
|  | Sit-Only Bench          |
|  | Interpretive Sign       |



Figure 6-12: Concept Plan - Sheet 12



SHEET 6: PLAN VIEW



TREE SUCH AS LEGEND:

- |   |  |  |
|---|--|--|
| Ironwood - <i>Lyonothamnus floribundus</i>  | CA Sycamore - <i>Platanus racemosa</i>       | Date Palm - <i>Phoenix dactylifera</i> |
| Torrey Pine - <i>Pinus torreyana</i>        | Bay Laurel - <i>Umbellularia californica</i> | Existing Tree                          |
| Western Redbud - <i>Cercis occidentalis</i> | Brisbane Box - <i>Lophostemon confertus</i>  | Existing Palm                          |
| Crape Myrtle - <i>Lagerstroemia indica</i>  | Peppermint Tree - <i>Agonis flexuosa</i>     |  |
| Bronze Loquat - <i>Eriobotrya deflexa</i>   | Ornamental Pear - <i>Pyrus species</i>       |  |
| CA Live Oak - <i>Quercus agrifolia</i>      | Common Alder - <i>Alnus rhombifolia</i>      |  |
| Valley Oak - <i>Quercus lobata</i>          | Willow - <i>Salix species</i>                |  |
| Island Oak - <i>Quercus tomentella</i>      | Elderberry - <i>Sambucus mexicana</i>        |  |

SIGN LEGEND:

- ① Stop Sign
- ② Stop & No Right Turn
- ③ Stop & Right Turn Only
- ④ Bus/Bike Only
- ⑤ Yield to Pedestrians
- ⑥ Do Not Enter One Way
- ⑦ Security Camera
- ⑧ Bike Stop Sign

SITE LEGEND:

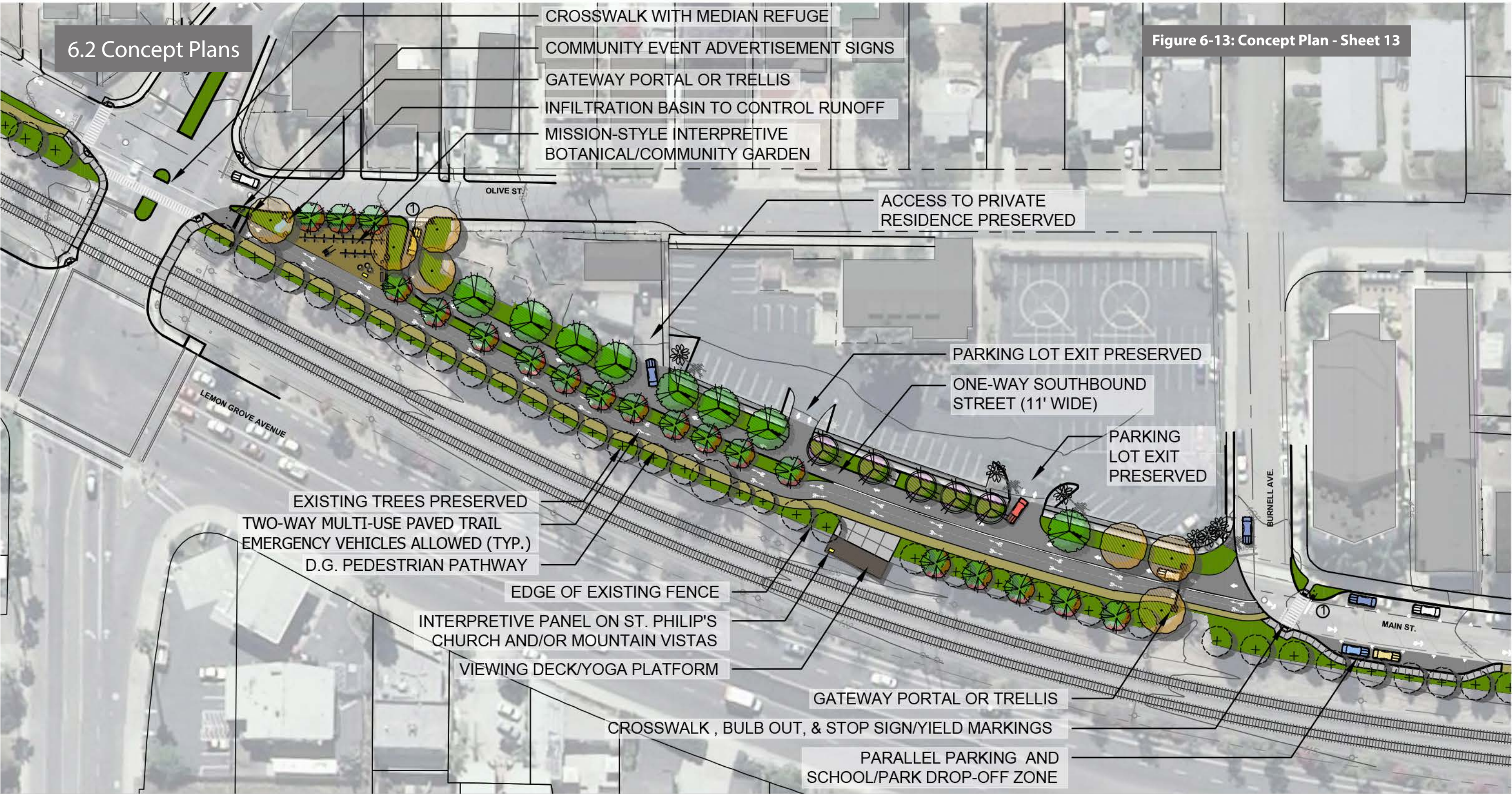
- Union Pacific Property
- Bike Boulevard Markings
- ADA Ramp
- Boulders
- Sit-Only Bench
- Interpretive Sign

MATCHLINE SEE SHEET 7

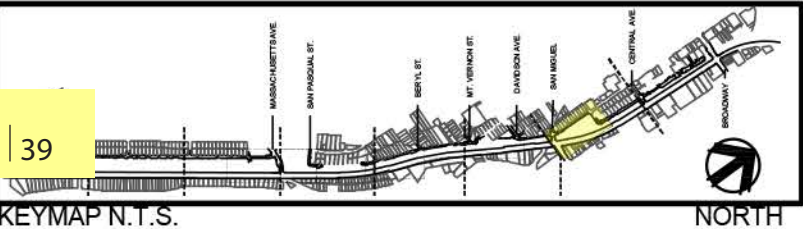


6.2 Concept Plans

Figure 6-13: Concept Plan - Sheet 13



SHEET 6A: DETAIL PLAN



KEYMAP N.T.S.

TREE SUCH AS LEGEND:

- |   |  |  |
|---|--|--|
| Ironwood - <i>Lyonothamnus floribundus</i>  | CA Sycamore - <i>Platanus racemosa</i>       | Date Palm - <i>Phoenix dactylifera</i> |
| Torrey Pine - <i>Pinus torreyana</i>        | Bay Laurel - <i>Umbellularia californica</i> | Existing Tree                          |
| Western Redbud - <i>Cercis occidentalis</i> | Brisbane Box - <i>Lophostemon confertus</i>  | Existing Palm                          |
| Crape Myrtle - <i>Lagerstroemia indica</i>  | Peppermint Tree - <i>Agonis flexuosa</i>     |  |
| Bronze Loquat - <i>Eriobotrya deflexa</i>   | Ornamental Pear - <i>Pyrus species</i>       |  |
| CA Live Oak - <i>Quercus agrifolia</i>      | Common Alder - <i>Alnus rhombifolia</i>      |  |
| Valley Oak - <i>Quercus lobata</i>          | Willow - <i>Salix species</i>                |  |
| Island Oak - <i>Quercus tomentella</i>      | Elderberry - <i>Sambucus mexicana</i>        |  |

SIGN LEGEND:

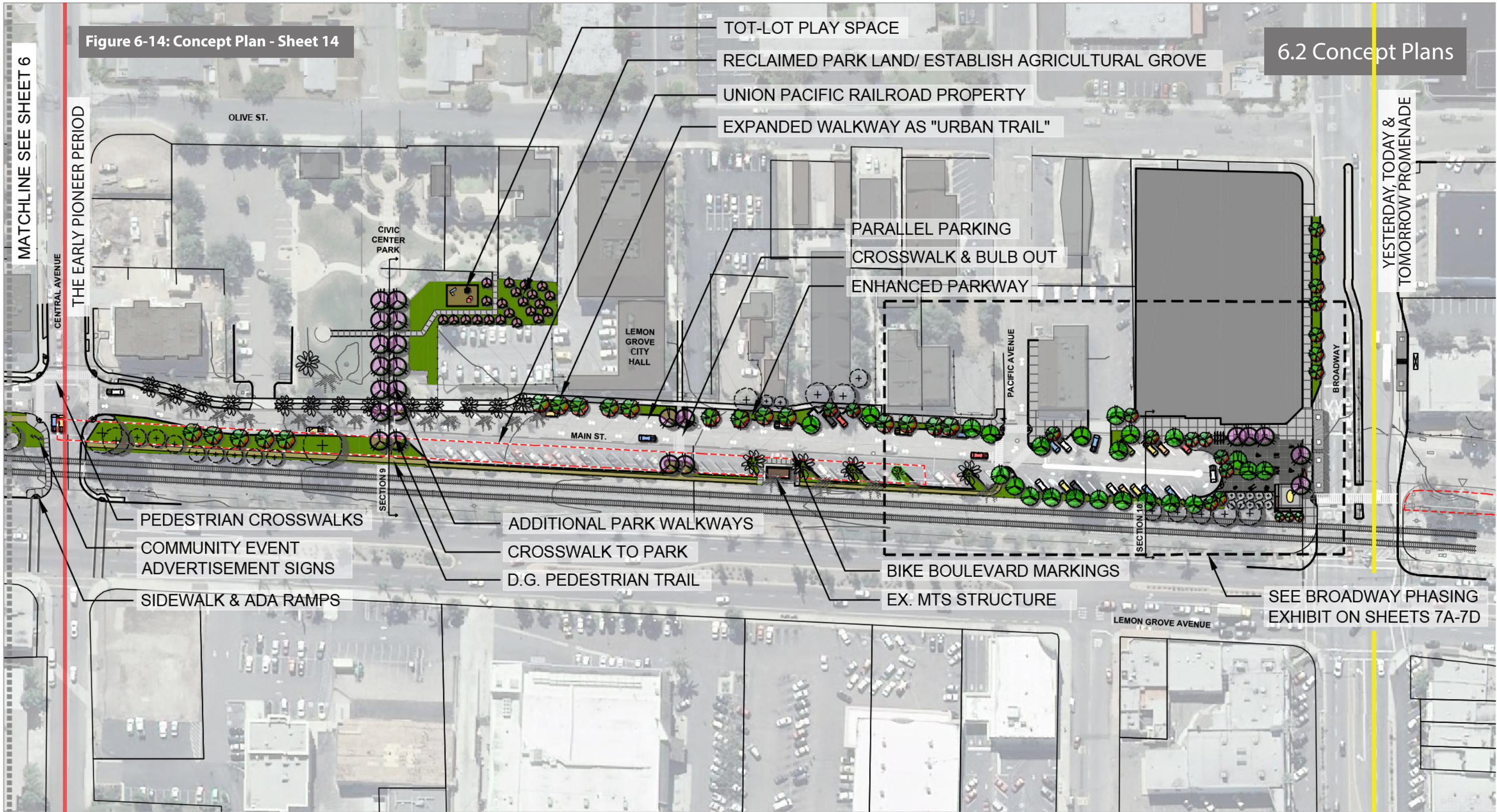
- |   |                        |
|---|------------------------|
| ① | Stop Sign              |
| ② | Stop & No Right Turn   |
| ③ | Stop & Right Turn Only |
| ④ | Bus/Bike Only          |
| ⑤ | Yield to Pedestrians   |
| ⑥ | Do Not Enter One Way   |
| ⑦ | Security Camera        |
| ⑧ | Bike Stop Sign         |

SITE LEGEND:

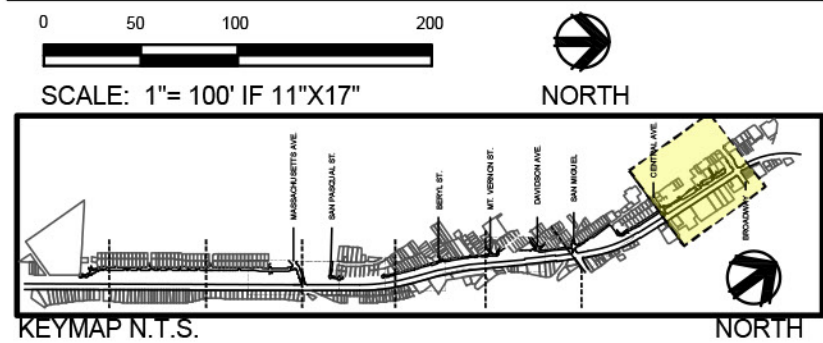
- |  |                         |
|--|-------------------------|
|  | Union Pacific Property  |
|  | Bike Boulevard Markings |
|  | ADA Ramp                |
|  | Boulders                |
|  | Sit-Only Bench          |
|  | Interpretive Sign       |



Figure 6-14: Concept Plan - Sheet 14



SHEET 7: PLAN VIEW



TREE SUCH AS LEGEND:

- |   |  |  |
|---|--|--|
| Ironwood - <i>Lyonothamnus floribundus</i>  | CA Sycamore - <i>Platanus racemosa</i>       | Date Palm - <i>Phoenix dactylifera</i> |
| Torrey Pine - <i>Pinus torreyana</i>        | Bay Laurel - <i>Umbellularia californica</i> | Existing Tree                          |
| Western Redbud - <i>Cercis occidentalis</i> | Brisbane Box - <i>Lophostemon confertus</i>  | Existing Palm                          |
| Crape Myrtle - <i>Lagerstroemia indica</i>  | Peppermint Tree - <i>Agonis flexuosa</i>     |  |
| Orange Tree - <i>Citrus species</i>         | Ornamental Pear - <i>Pyrus species</i>       |  |
| CA Live Oak - <i>Quercus agrifolia</i>      | Common Alder - <i>Alnus rhombifolia</i>      |  |
| Valley Oak - <i>Quercus lobata</i>          | Willow - <i>Salix species</i>                |  |
| Island Oak - <i>Quercus tomentella</i>      | Elderberry - <i>Sambucus mexicana</i>        |  |

SIGN LEGEND:

- ① Stop Sign
- ② Stop & No Right Turn
- ③ Stop & Right Turn Only
- ④ Bus/Bike Only
- ⑤ Yield to Pedestrians
- ⑥ Do Not Enter One Way
- ⑦ Security Camera
- ⑧ Bike Stop Sign

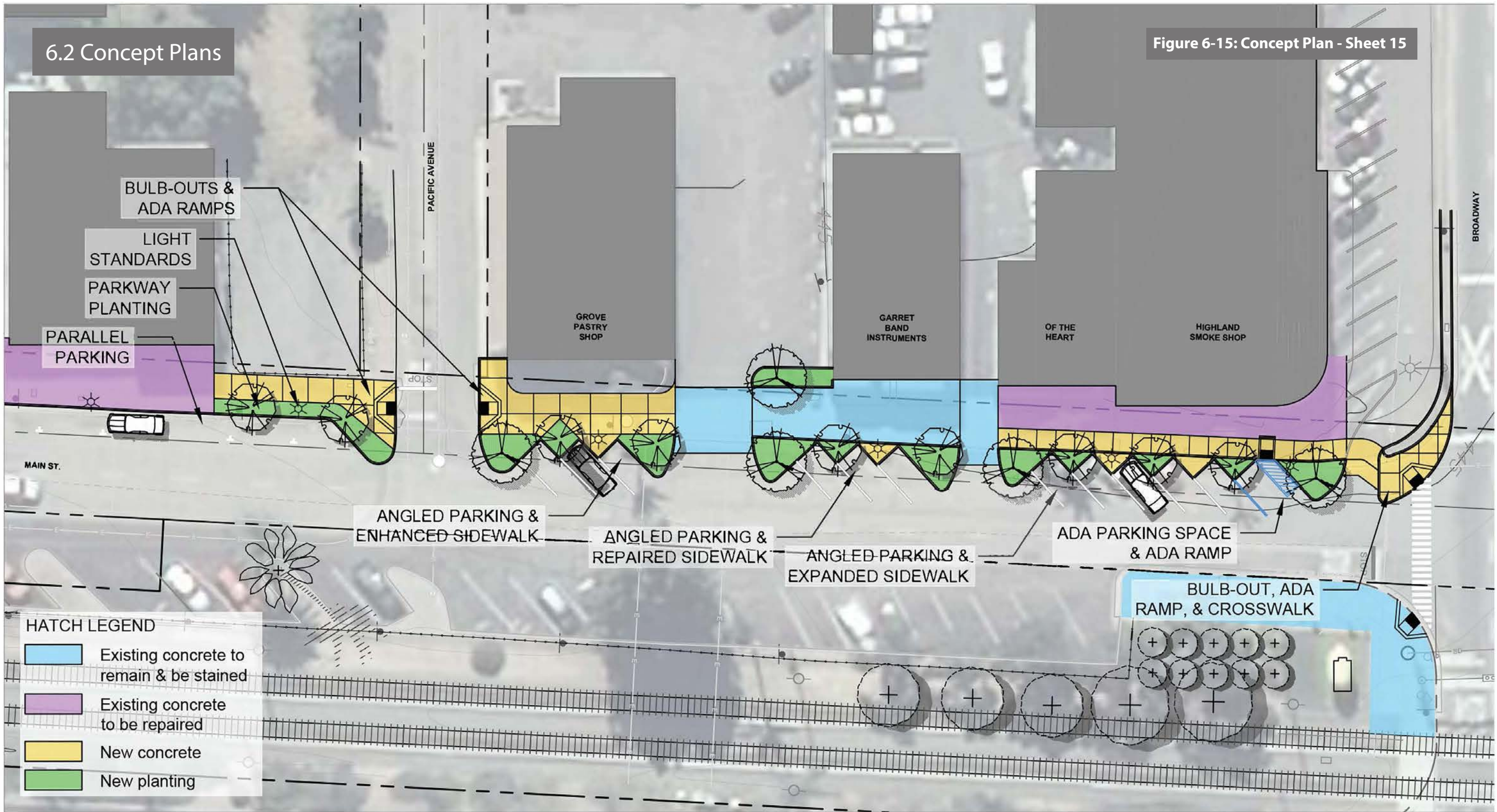
SITE LEGEND:

- Union Pacific Property
- Bike Boulevard Markings
- ADA Ramp
- Boulders
- Sit-Only Bench
- Interpretive Sign



6.2 Concept Plans

Figure 6-15: Concept Plan - Sheet 15



HATCH LEGEND

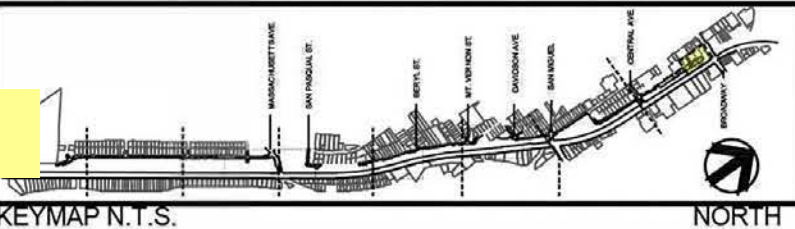
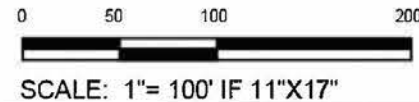
- Existing concrete to remain & be stained
- Existing concrete to be repaired
- New concrete
- New planting

SHEET 7A: SHORT TERM - Alt. 2

TREE SUCH AS LEGEND:

SIGN LEGEND:

SITE LEGEND:



- Ironwood - *Lyonothamnus floribundus*
- Torrey Pine - *Pinus torreyana*
- Western Redbud - *Cercis occidentalis*
- Crape Myrtle - *Lagerstroemia indica*
- Orange Tree - *Citrus species*
- CA Live Oak - *Quercus agrifolia*
- Valley Oak - *Quercus lobata*
- Island Oak - *Quercus tomentella*

- CA Sycamore - *Platanus racemosa*
- Bay Laurel - *Umbellularia californica*
- Brisbane Box - *Lophostemon confertus*
- Peppermint Tree - *Agonis flexuosa*
- Ornamental Pear - *Pyrus species*
- Common Alder - *Alnus rhombifolia*
- Willow - *Salix species*
- Elderberry - *Sambucus mexicana*

- Date Palm - *Phoenix dactylifera*
- Existing Tree
- Existing Palm

- ① Stop Sign
- ② Stop & No Right Turn
- ③ Stop & Right Turn Only
- ④ Bus/Bike Only
- ⑤ Yield to Pedestrians
- ⑥ Do Not Enter One Way
- ⑦ Security Camera
- ⑧ Bike Stop Sign

- Union Pacific Property
- Bike Boulevard Markings
- ADA Ramp
- Boulders
- Sit-Only Bench
- Interpretive Sign







# 7 | 30% Public Improvement Plan Set

## 7.1 Purpose & Future Use

To support the final design concept for the Connect Main Street project, a set of public improvement plans showing grading, retaining walls, and other important features was prepared. The plan set is referred to as a 30% level of drawings. These plans are used to help determine the likely limits of work, the technical elements that will need to be worked out and the possible costs of construction. The 30% does not refer to only 30% of the project area handled in full construction document. It refers to 30% level of effort, with typical subsequent phases of 60%, 90% and 100%. These subsequent phases are needed to work out more technical detail, precise solutions and the types of information needed to direct a contractor to construct the project and for the agency implementing the work, a set of plans that can be used to make sure that the project is being built according to plans.

This 30% plan set explores the more practical aspects of the proposed improvements including topographical modifications that will need to be made to accommodate the proposed amenities and how drainage will be modified and handled by the design. This 30% plan set can be used to determine possible environmental impacts and can be used as a basis for applying for construction grants from various organizations.

Technical requirements of rerouting of conflicting utilities, of engineering stormwater facilities and in fine adjusting the grading plans to make an area balance or to meet grade within defined limits of rights of way, will need to be worked on in more detail after his point in time.

Extensive review by City of Lemon Grove staff have identified a number of issues or constraints that will need to be worked through once the project receives funding and once a Civil Engineer had been hired to produce the final construction documents. These comments have been placed at the end of this document for future inclusion in the evolution of the project.

Agency permitting, Memorandums of Agreement (or Understanding) and specific requirements for such items as stormwater runoff, will require future coordination and engineering. Supplemental environmental review may be needed by staff if the project footprint or features change dramatically or if new environmental impacts are thought to possibly occur. Likewise, final design of site amenities, design standards, plant materials, public art, interpretive panels, paving materials, lighting and other features, will need to be determined and refined. Guidance provided by this Conceptual Plan and Public Improvement Plan set should be followed closely in order to respect the public input process and the extensive staff efforts as well as the environmental review results. However, technical issues and changed priorities may make changes necessary. If the changes diverge too much from the plan, the environmental review and the technical aspects and cost estimates will need to be reassessed.



Grading and drainage modifications would improve on the existing drainage ditch system in use and restore much of the creek area.



H:\DATA\140259 LG MAIN ST. PROM. EXT. PH-2\CADD\LAND\DLV\LMPROVE\140259-01-TT.DWG DWIENER 8/1/16 1:47 pm

GENERAL NOTES

1. NO WORK SHALL COMMENCE UNTIL ALL NECESSARY PERMITS HAVE BEEN OBTAINED FROM THE CITY AND OTHER APPROPRIATE AGENCIES.
2. THE APPROVAL OF THIS PLAN OR ISSUANCE OF A PERMIT BY THE CITY OF LEMON GROVE DOES NOT AUTHORIZE THE CONTRACTOR TO VIOLATE ANY FEDERAL, STATE OR CITY LAWS, ORDINANCES, REGULATIONS, OR POLICIES.
3. CONSTRUCTION IS LIMITED TO HOURS AND DAYS STATED IN THE CONTRACT. THIS INCLUDES WARMING UP, REPAIR, ARRIVAL & DEPARTURE OF ALL EQUIPMENT. NO CONSTRUCTION SHALL OCCUR ON SATURDAY, SUNDAY OR HOLIDAYS RECOGNIZED BY THE CITY WITHOUT WRITTEN PERMISSION OF THE CITY ENGINEER.
4. AN ENCROACHMENT PERMIT IS REQUIRED SEPARATE FROM APPROVAL OF THESE PLANS FOR ANY WORK WITHIN THE RIGHT-OF-WAY.
5. PRIOR TO ANY DISTURBANCE TO THE SITE, EXCLUDING UTILITY MARK-OUTS AND SURVEYING, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE CITY OF LEMON GROVE ENGINEERING DIVISION.
6. CONTRACTOR SHALL NOTIFY THE ENGINEERING INSPECTOR A MINIMUM OF 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.
7. ALL EXISTING UTILITIES OR STRUCTURE REPORTED BY THE UTILITY COMPANIES ARE INDICATED HEREON BASED ON INFORMATION OF RECORD. IT SHALL BE THE DUTY OF THE CONTRACTOR TO MAKE A DETERMINATION AS TO THE LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL NOT BEGIN WORK UNTIL HE/SHE HAS MADE THIS DETERMINATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS/HER FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES. CALL UNDERGROUND SERVICE ALERT AT 1-800-422-4133 AT LEAST TWO WORKING DAYS BEFORE STARTING CONSTRUCTION.
8. CONTRACTOR SHALL NOTIFY THE ENGINEERING INSPECTOR A MINIMUM OF 24 HOURS PRIOR TO SCHEDULING AN INSPECTION. NO INSPECTION SHALL BE SCHEDULED ON FRIDAYS WITHOUT THE APPROVAL OF THE CITY ENGINEER WITH AT LEAST 48-HOURS NOTICE. SEE CITY OF LEMON GROVE MUNICIPAL CODE SECTION 18.08.800 FOR REQUIRED INSPECTIONS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEY MONUMENTS AND/OR VERTICAL CONTROL BENCHMARKS WHICH ARE DISTURBED OR DESTROYED BY CONSTRUCTION. A LAND SURVEYOR MUST FIELD LOCATE, REFERENCE, AND/OR PRESERVE ALL HISTORICAL OR CONTROLLING MONUMENTS PRIOR TO ANY EARTHWORK. IF DESTROYED, A LAND SURVEYOR SHALL REPLACE SUCH MONUMENTS WITH APPROPRIATE MONUMENTS. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED AS REQUIRED BY THE PROFESSIONAL LAND SURVEYORS ACT. IF ANY VERTICAL CONTROL IS TO BE DISTURBED OR DESTROYED, THE CITY OF LEMON GROVE ENGINEERING DIVISION MUST BE NOTIFIED. IN WRITING, AT LEAST 3 DAYS PRIOR TO THE CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF REPLACING ANY VERTICAL CONTROL BENCHMARKS DESTROYED BY THE CONSTRUCTION AT THEIR OWN EXPENSE.
10. THE CONTRACTOR SHALL PROTECT EXISTING PUBLIC AND PRIVATE IMPROVEMENTS. IF ANY EXISTING IMPROVEMENT ARE DAMAGED DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL REPAIR OR REMOVE AND REPLACE AT THEIR EXPENSE.
11. CONTRACTOR SHALL IMPLEMENT AN EROSION AND SEDIMENT CONTROL PROGRAM DURING THE PROJECT GRADING AND/OR CONSTRUCTION ACTIVITIES. THE PROGRAM SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE STATE WATER RESOURCE CONTROL BOARD AND THE CITY OF LEMON GROVE MUNICIPAL CODE AND STORM WATER STANDARDS.
12. DEVIATIONS FROM THESE SIGNED PLANS WILL NOT BE ALLOWED UNLESS A CONSTRUCTION CHANGE IS APPROVED BY THE CITY ENGINEER OR THE CHANGE IS REQUIRED BY THE CITY INSPECTOR.
13. A CAL/OSHA PERMIT IS REQUIRED FOR EXCAVATIONS DEEPER THAN 5' AND FOR SHORING AND/OR UNDERPINNING. CONTRACTOR TO PROVIDE A COPY OF OSHA PERMIT TO THE CITY.

HELIX WATER DISTRICT NOTES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT HELIX WATER DISTRICT 48 HOURS PRIOR TO COMMENCING WORK AT (619-596-3860) AND UNDERGROUND SERVICE ALERT FOR LOCATION OF EXISTING WATER FACILITIES AT 1-800-422-4133.
2. CONTRACTOR SHALL PROTECT ALL EXISTING HELIX WATER DISTRICT FACILITIES AND SHALL BE FINANCIALLY RESPONSIBLE FOR ANY DAMAGE TO HELIX WATER DISTRICT FACILITIES AS A RESULT OF HIS/HER OPERATION. CONTRACTOR TO PROVIDE CONTINUOUS WATER SERVICE TO ALL WATER ACCOUNTS SHOWN OR NOT SHOWN ON THESE PLANS DURING ALL PHASES OF CONSTRUCTION.
3. APPROVAL/REVIEW OF PLANS BY HELIX WATER DISTRICT DOES NOT CONSTITUTE RESPONSIBILITY FOR ACCURACY OF INFORMATION NOR LOCATIONS OF ANY EXISTING UTILITIES.
4. HELIX WATER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY WATER LATERALS, FIRE HYDRANTS OR FACILITIES THAT FALL WITHIN DRIVEWAYS OR OTHERWISE CONFLICT WITH ANY PROPOSED FACILITIES OR IMPROVEMENTS.
5. HELIX WATER SHALL BE RESPONSIBLE FOR RELOCATION OR ADJUSTMENT OF ANY NEW OR EXISTING WATER SERVICE APPURTENANCES, MANHOLES, GATE VALVE COVERS, OR METER BOXERS TO NEW FINISH GRADE.
6. ALL UNDERGROUND UTILITIES, FIRE HYDRANTS, AND LATERALS SHALL BE INSTALLED/RELOCATED BEFORE CONSTRUCTION OF CURBS, CONCRETE CROSS GUTTERS, SIDEWALK OR SURFACING OF STREETS.
7. DEVELOPER AGREES THAT IF THEY, THEIR EMPLOYEES, AGENTS, OR ANY INDEPENDENT CONTRACTORS OR SUBCONTRACTORS USE WATER OTHER THAN THROUGH AUTHORIZED WATER METER, DEVELOPER SHALL PAY A CHARGE, DETERMINED BY HELIX WATER DISTRICT, PER OCCURRENCE FOR SAID USE. SAID PAYMENT MAY BE DEDUCTED FROM ANY DEPOSIT DEVELOPER HAS WITH HELIX WATER DISTRICT.
8. NO PERSON, OTHER THAN AN EMPLOYEE OR AGENT OF THE HELIX WATER DISTRICT, SHALL HAVE A RIGHT TO OPERATE ANY PART OF A HELIX WATER DISTRICT WATER DISTRIBUTION SYSTEM AND FIRE HYDRANTS. ANY PERSON WHO TAMPERS OR INTERFERES WITH ANY PART OF COMPONENT OF SAID SYSTEM, OR CAUSES OR PERMITS ANY ACT OF TAMPERING OR INTERFERING WITH THE SYSTEM, SHALL BE LIABLE FOR ANY INJURY OR DAMAGE CAUSED THEREBY OR RESULTING THERE FROM A CHARGE, DETERMINED BY HELIX WATER DISTRICT, PER OCCURRENCE WILL BE IMPOSED ON ANY PERSON OR COMPANY WHO OPERATES ANY PART OF THE HELIX WATER DISTRICT WATER SYSTEMS WITHOUT PROPER AUTHORIZATION.
9. FOR WORK OVER EXISTING WATER FACILITIES, HEAVY EQUIPMENT (ABOVE H2O LOADING) SHALL BE USED WHEN COVER OVER THE WATER MAIN IS LESS THAN 36 INCHES THROUGH ALL PHASES OF CONSTRUCTION, INCLUDING THE REMOVAL, OVER EXCAVATION AND/OR INSTALLATION OF PAVEMENT SECTIONS, WITHOUT THE WRITTEN APPROVAL OF HELIX WATER DISTRICT.
10. HELIX WATER DISTRICT WILL ADJUST NECESSARY WATER SERVICE TO STANDARD LOCATION APPROXIMATELY SIX (6) WEEKS AFTER RECEIPT OF FINAL SIGNED PLANS, AWARD OF BID, & COORDINATION WITH THE CONTRACTOR.

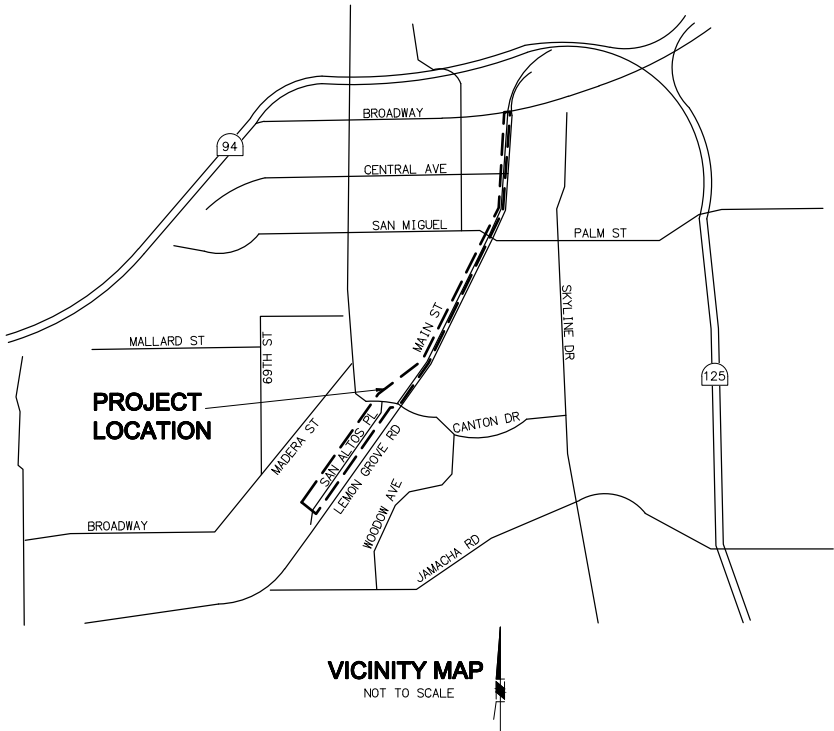
STRIPING AND SIGNING GENERAL NOTES

1. INSTALLATION OF ALL STRIPING, SIGNS AND PAVEMENT MARKERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. ALL STRIPING AND SIGNING SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE FOLLOWING MANUALS: CALTRANS TRAFFIC MANUAL CALTRANS STANDARD SPECIFICATIONS SAN DIEGO REGIONAL STANDARD DRAWINGS
3. ALL SIGNING AND STRIPING IS SUBJECT TO THE APPROVAL OF THE CITY ENGINEER PRIOR TO INSTALLATION AND/OR REMOVAL.
4. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING, PAVEMENT MARKINGS AND LEGENDS BY SANDBLASTING AND/OR GRINDING. ANY DEBRIS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
5. SIGN POSTS SHALL BE INSTALLED WITH SQUARE PERFORATED STEEL TUBING WITH A BREAKAWAY BASE PER SAN DIEGO REGIONAL STANDARD DRAWING, M-45.
6. STRIPED CROSSWALKS SHALL HAVE AN INSIDE DIMENSION OF 10 FEET UNLESS INDICATED OTHERWISE.
7. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS (EXCEPT WITHIN BIKE LANES) SHALL BE THERMOPLASTIC.
8. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AT (619) 825-3810 A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO AND UPON COMPLETION OF STRIPING AND SIGNING.

CONSTRUCTION CHANGE TABLE			

UTILITY SIGNOFF			
COMPANY	PRINTED NAME	SIGNED	DATE
AT&T			
COX			
CWA			
SDG&E			

IMPROVEMENT PLANS FOR:  
MAIN STREET  
PROMENADE EXTENSION  
CITY OF LEMON GROVE



STATEMENT OF ENGINEER OF WORK

THE UNDERSIGNED ENGINEER AGREES THAT THE WORK PERFORMED BY THE ENGINEER SHALL COMPLY WITH THE GENERALLY ACCEPTED STANDARDS AND PRACTICES OF THE ENGINEER'S TRADE OR PROFESSION. THE ENGINEER FURTHER AGREES THAT THE WORK PERFORMED HEREIN SHALL BE IN ACCORDANCE WITH THE RULES AND REGULATIONS REQUIRED BY THE CITY OF LEMON GROVE, TO THE EXTENT THAT THE ENGINEER CONTROLS SUCH PERFORMANCE. THE ENGINEER AGREES THAT ANY PLAN/CHECK OR REVIEW PERFORMED BY THE CITY OF LEMON GROVE AND HELIX WATER DISTRICT IN ITS CAPACITY AS A PUBLIC ENTITY FOR THE PLANS PREPARED BY THE ENGINEER IS NOT A DETERMINATION BY THE CITY OF LEMON GROVE OF THE TECHNICAL SUFFICIENCY OR ADEQUACY OF THE PLANS OR DESIGN AND IT THEREFORE DOES NOT RELIEVE THE ENGINEER OF RESPONSIBILITY FOR THE PLANS OR DESIGN OF IMPROVEMENTS BASED THEREON. THE ENGINEER AGREES TO INDEMNIFY AND HOLD HARMLESS THE CITY OF LEMON GROVE AND ITS OFFICERS, AGENTS, AND EMPLOYEES FROM PROPERTY DAMAGE OR BODILY INJURY ARISING SOLELY FROM THE NEGLIGENCE ACTS, ERRORS, OR OMISSIONS OF THE ENGINEER AND HIS/HER AGENTS OR EMPLOYEES ACTING WITHIN THE COURSE AND SCOPE OF SUCH AGENCY AND EMPLOYMENT AND ARISING OUT OF THE WORK PERFORMED BY THE ENGINEER.

BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
TIMOTHY M. THIELE RCE 60283

PROJECT LOCATION

LEMON GROVE, CALIFORNIA - "MAIN STREET PROMENADE"  
FROM ALBERDI DRIVE TO BROADWAY

HEARTLAND FIRE AND RESCUE

APPROVED BY: \_\_\_\_\_  
CHRIS JENSON  
FIRE MARSHALL

DATE: \_\_\_\_\_

HELIX WATER DISTRICT:

REVIEWED BY: \_\_\_\_\_  
SIGNATURE EXPIRES IN ONE YEAR

S-15-026 \_\_\_\_\_ DATE

BENCHMARK

DATUM OF 1988 (NAVD88), BASED ON THE FOLLOWING MONUMENT STATIONS PER ROS 17103.

STATION	ELEVATION (FT)
28	291.21
31	364.38

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM (NAD83), ZONE 6,(EPOCH 1991.35) BASED LOCALLY ON THE FOLLOWING MONUMENT STATIONS PER ROS 17103.

STATION	NORTHING (FT)	GRID	EASTING (FT)	GRID
28	1841557.819		6317148.094	
31	1845949.162		6320112.934	

DATE OF SURVEY

APRIL 3, 2014

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WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING SPECIFICATIONS:

1. SAN DIEGO AREA REGIONAL STANDARD DRAWINGS (AUGUST 2012)
2. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "GREEN BOOK" (2009)
3. STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS (2006)
4. STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD SPECIFICATIONS (2006)
5. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2012 MUTCD)
6. STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL TO MUTCD
7. WATER AGENCIES' STANDARDS, LATEST EDITION

LEGEND

ITEM	SYMBOL
PROPOSED CENTERLINE	— C —
PROPOSED AC PAVING	— AC —
PROPOSED CONCRETE	— CON —
PROPOSED BIOFILTRATION BMP	— BMP —
CURB AND GUTTER	— CG —
RETAINING WALL	— RW —
CURB RAMP	— CR —
PROPOSED CONTOUR	— 212 —
EXISTING CONTOUR	— 212 —
LIMITS OF WORK/DAYLIGHT LINE	— L —
EXISTING PROPERTY LINE	— P —
EXISTING RIGHT OF WAY LINE	— R/W —
EXISTING CURB AND GUTTER	— CG —
EXISTING EDGE OF PAVEMENT	— EP —
EXISTING WALL	— W —
EXISTING FENCE	— F —
EXISTING OVERHEAD ELECTRIC	— OH —
EXISTING GAS MAIN	— G —
EXISTING WATER MAIN	— W —
EXISTING SEWER MAIN	— S —
EXISTING STORM DRAIN	— SD —
EXISTING FIRE HYDRANT	— FH —
PROPOSED FIRE HYDRANT	— PH —
EXISTING WATER METER	— WM —

SHEET INDEX

SHEET	DESCRIPTION
1	TITLE SHEET
2	INDEX MAP
3	TYPICAL SECTIONS
4-15	IMPROVEMENT PLANS

STORMWATER NOTES

SEE SHEET 2.

ABBREVIATIONS

AB	AGGREGATE BASE	MB	MAILBOX
AC	ASPHALT CONCRETE	PCC	PORTLAND CEMENT CONCRETE
APN	ASSESSOR'S PARCEL NUMBER	PCC	POINT OF CONTINUOUS CURVE
BC	BEGIN CURVE	PP	POWER POLE
BCR	BEGIN CURB RETURN	PRC	POINT OF REVERSE CURVE
C&G	CURB & GUTTER	PRV	PRESSURE REDUCING VALVE
CO	CLEAN OUT	PRV	PRESSURE REDUCING VALVE
CONC	CONCRETE	PWT	PAVEMENT
EC	END CURVE	RET	RETAINING
ECR	END CURB RETURN	RIM	RIM ELEVATION
EOP	EDGE OF PAVEMENT	SCO	SEWER CLEANOUT
EX	EXISTING	SD	STORM DRAIN
FG	FINISH GRADE	SDG&E	SAN DIEGO GAS & ELECTRIC
FL	FLOWLINE	SDRSD	SAN DIEGO REGIONAL STANDARD DRAWING
FS	FINISH SURFACE	SMH	SEWER MANHOLE
GV	GAS VALVE	STD	STANDARD
HP	HIGH POINT	SWK	SIDEWALK
LF	LINEAR FEET	TB	TOP OF BERM
LP	LOW POINT	TC	TOP OF CURB
		TS	TRAFFIC SIGNAL
		WV	WATER VALVE

IMPROVEMENT PLANS FOR:

MAIN STREET PROMENADE EXTENSION

CITY OF LEMON GROVE, CALIFORNIA  
ENGINEERING DEPARTMENT  
SHEET 1 OF 15 SHEETS

APPROVED: _____	CONTRACT NO. _____
CITY ENGINEER _____	CITY ENGINEER _____
DESCRIPTION _____	PROJECT MANAGER _____
DRAWN BY _____	DESIGN ENGINEER _____
APPROVED _____	NAD 83 COORDINATES _____
DATE _____	
FILED _____	
AS-BUILT _____	
CONTRACTOR _____	DATE STARTED _____
INSPECTOR _____	DATE COMPLETED _____

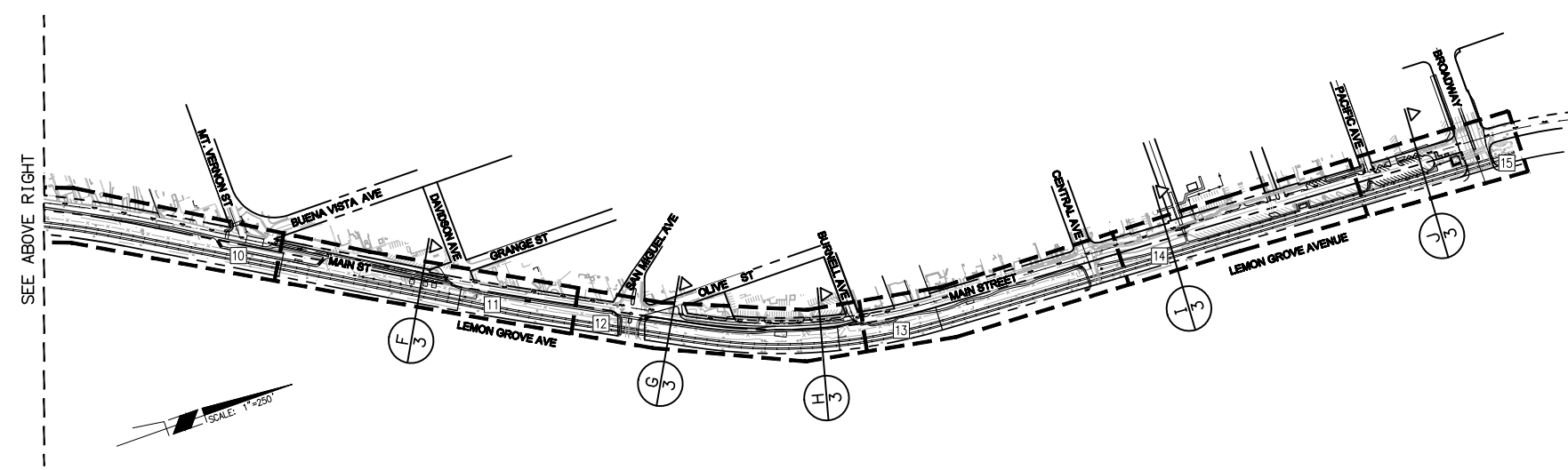
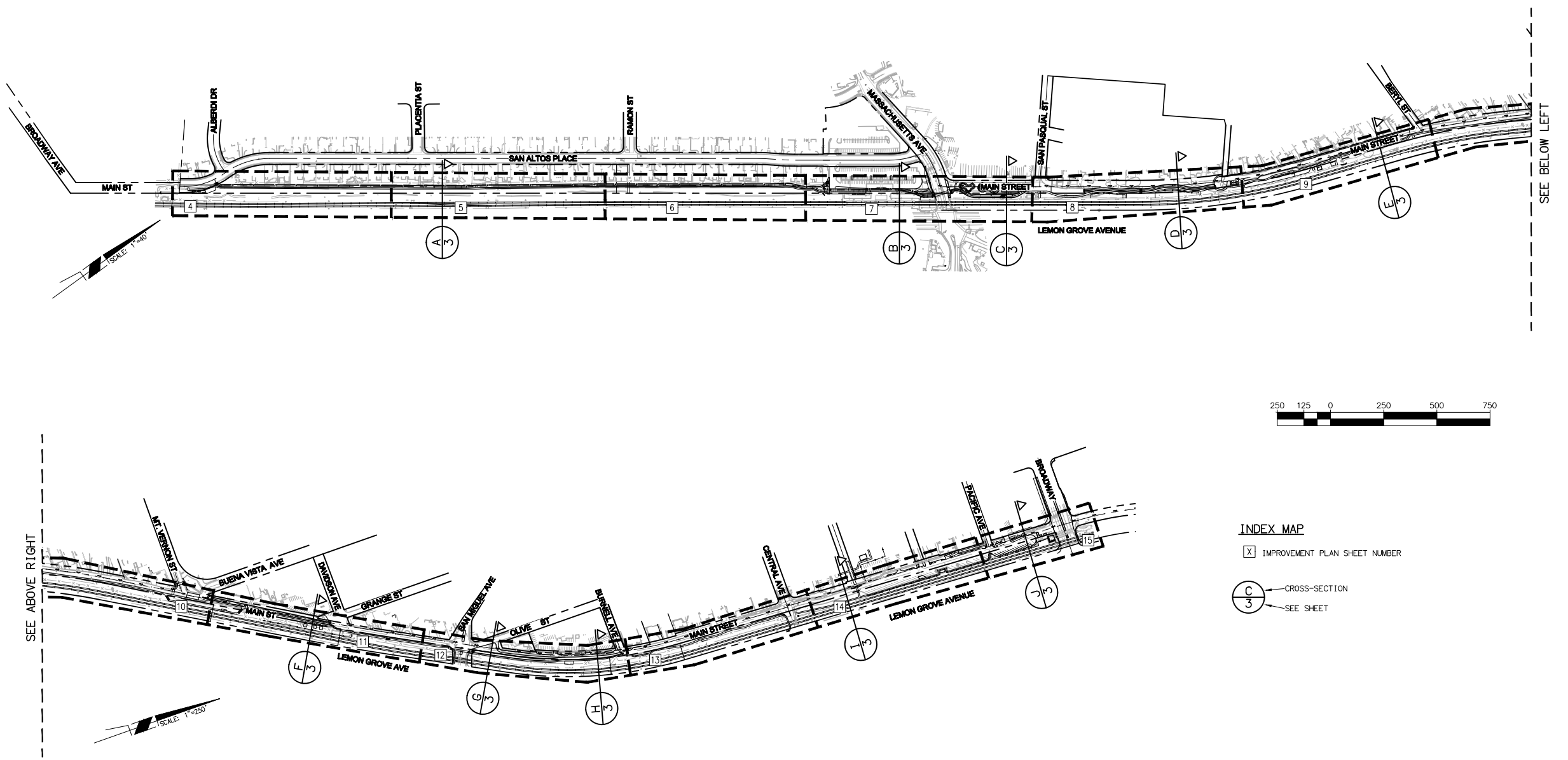
HWD #S-15-026

Figure 7-1: Public Improvement Plans - Sheet 1

30% SUBMITTAL - NOT FOR CONSTRUCTION



7.2 Public Improvement Plans



**INDEX MAP**

[X] IMPROVEMENT PLAN SHEET NUMBER

C-3 CROSS-SECTION  
SEE SHEET

- STORMWATER NOTES**
- PAVED TRAILS SHALL USE PERVIOUS PAVERS, ASPHALT AND/OR CONCRETE.
  - DESIGNATED PARKING AREAS SHALL BE CONSTRUCTED WITH POROUS ASPHALT, CONCRETE OR PERMEABLE PAVERS. RUNOFF SHALL BE DIRECTED TO BIORETENTION AREAS AND NOT DIRECTLY INTO THE STORM DRAIN OR CHANNEL.
  - SLOPES OF CHANNEL SHALL BE STABILIZED TO PREVENT EROSION USING NATIVE VEGETATION.
  - CONCRETE SLABS WITHIN THE CHANNEL SHALL BE REMOVED TO RESTORE NATURAL CHANNEL.
  - ALL NEW CURB AND GUTTERS SHALL BE CONSTRUCTED WITH POROUS CONCRETE AND/OR ASPHALT.
  - ALL TRASH AND RECYCLING CONTAINERS SHALL HAVE COVERS TO PREVENT RAINWATER FROM FILLING THE CONTAINER.
  - PROJECT SHALL BE DESIGNATED PESTICIDE/HERBICIDE/FERTILIZER FREE IMPLEMENTING INTEGRATED PEST MANAGEMENT PRACTICES.
  - COMMUNITY GARDENS TO BE ORGANIC, NO USE OF HERBICIDE, PESTICIDES, AND/OR SYNTHETIC FERTILIZERS.
  - INCLUDE PET WASTE DISPENSERS THROUGHOUT THE PARK.

	IMPROVEMENT PLANS FOR:					
	INDEX MAP					
	MAIN STREET PROMENADE EXTENSION					
	CITY OF LEMON GROVE, CALIFORNIA ENGINEERING DEPARTMENT SHEET 2 OF 15 SHEETS					CONTRACT NO.
	APPROVED					
CITY ENGINEER	DRAWN BY	APPROVED	DATE	FILMED	PROJECT MANAGER	
ORIGINAL					DESIGN ENGINEER	
AS-BUILT					NAD 83 COORDINATES	
CONTRACTOR	DATE STARTED					
INSPECTOR	DATE COMPLETED					

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CONTRACTOR MUST NOTIFY THE BELOW LISTED AGENCY AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION :

UNDERGROUND SERVICE ALERT (USA) 1-800-422-4133

30% SUBMITTAL - NOT FOR CONSTRUCTION

Figure 7-2: Public Improvement Plans - Sheet 2



7.2 Public Improvement Plans

30% SUBMITTAL - NOT FOR CONSTRUCTION

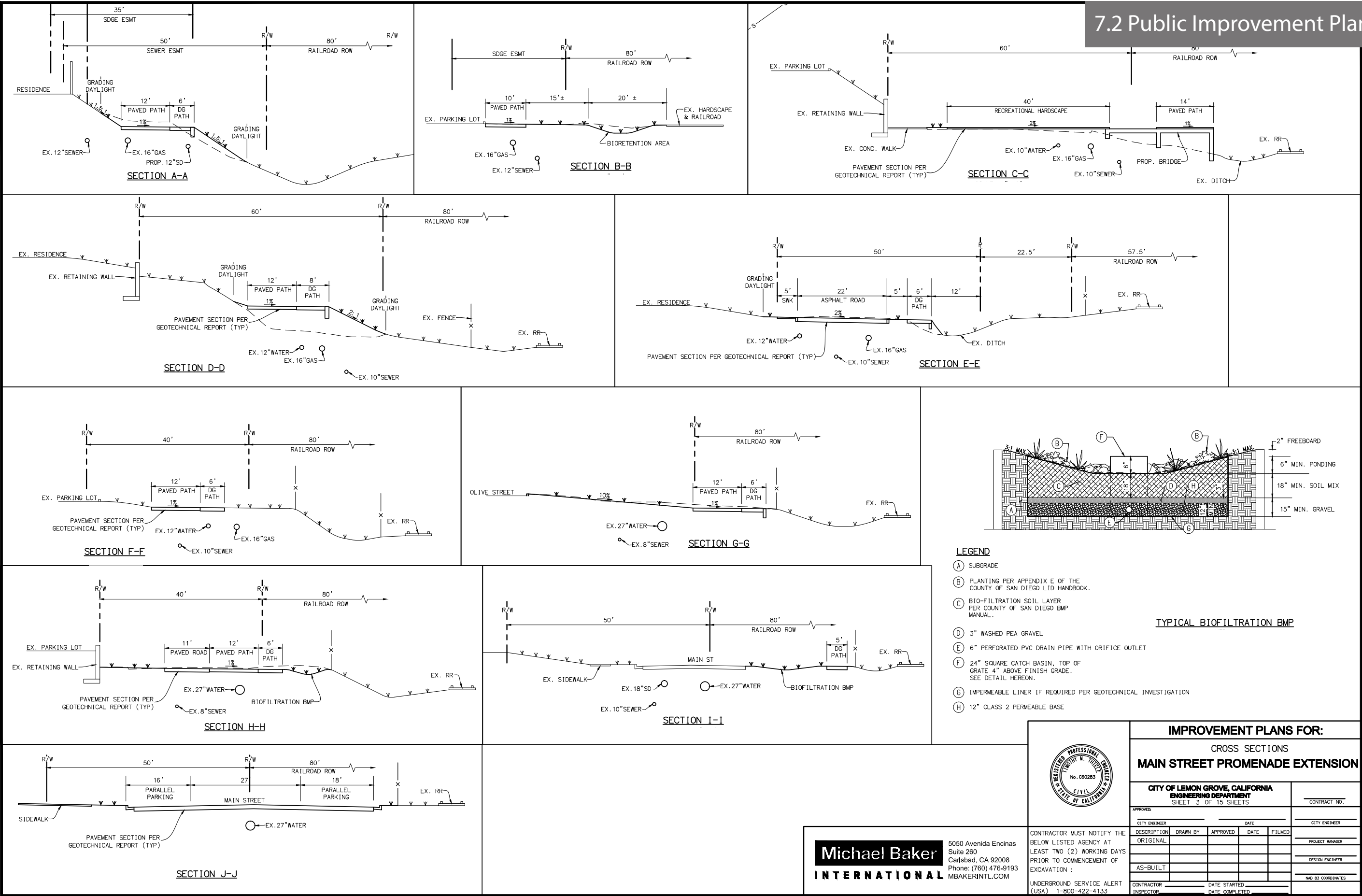
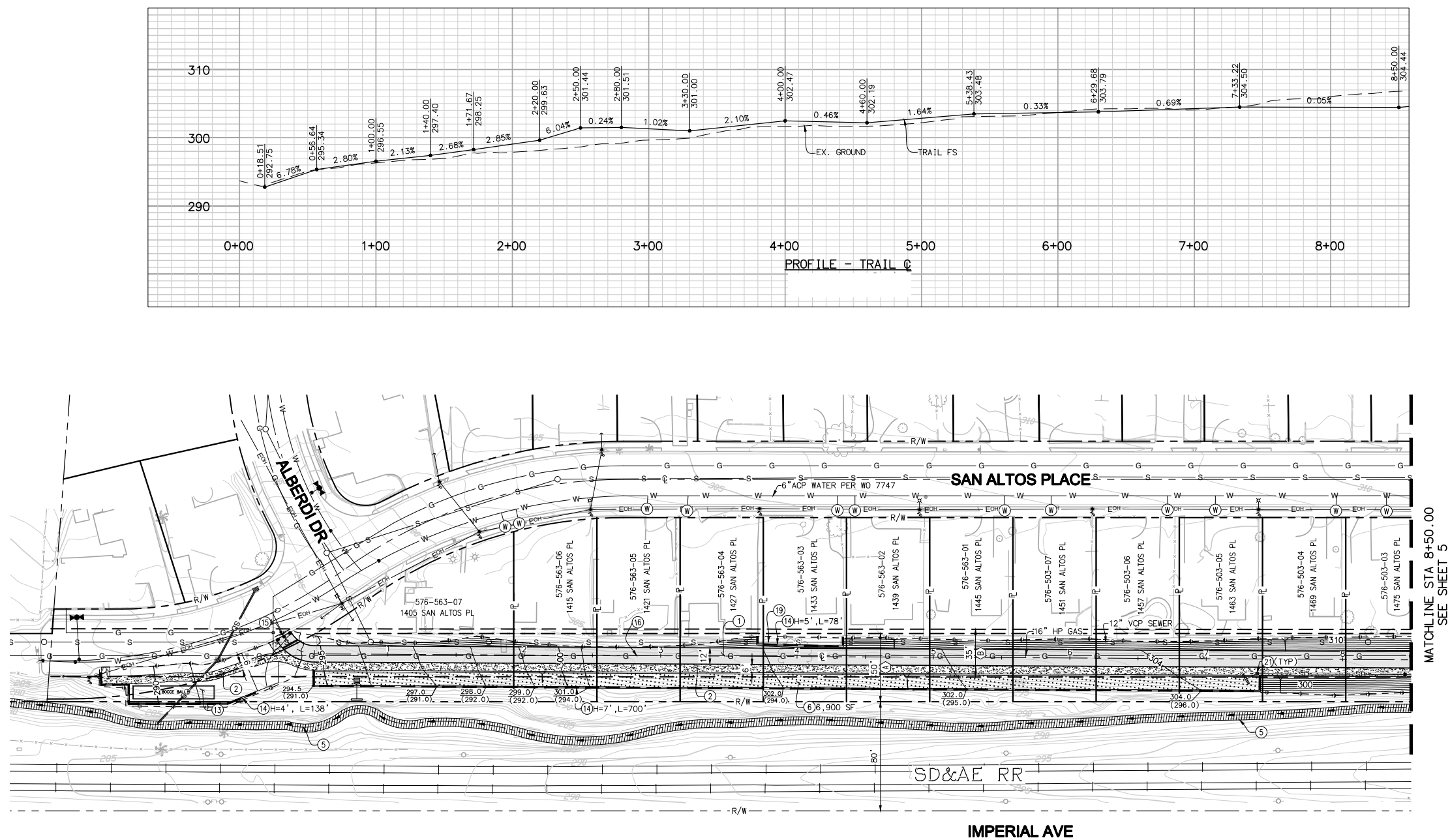


Figure 7-3: Public Improvement Plans - Sheet 3

HWD #S-15-026



7.2 Public Improvement Plans

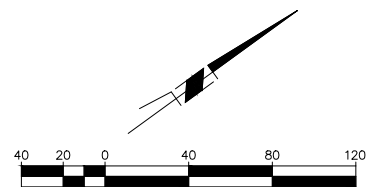


CONSTRUCTION NOTES

- 1 MULTI-USE PAVED TRAIL. 3" ASPHALT OVER 6" CLASS II AGGREGATE BASE.
- 2 DECOMPOSED GRANITE PEDESTRIAN PATHWAY. 4" DG OVER 6" CLASS II AGGREGATE BASE.
- 5 RESTORE EXISTING NATURAL CHANNEL PER LANDSCAPE PLAN.
- 6 BIOFILTRATION BMP AREA PER DETAIL ON SHEET 3. INSTALL 24" CATCH BASIN OUTLET STRUCTURE WITH 12" PVC OUTFALL PIPE.
- 15 EDUCATIONAL/RECREATIONAL AREA PER LANDSCAPE PLAN.
- 14 MASONRY RETAINING WALL PER SDRSD C-2.
- 15 INSTALL BOLLARDS WHERE PROPOSED TRAIL ENTERS ROADWAY.
- 16 EX. 16" HP GAS, MAINTAIN 36" MIN. COVER BELOW FINISH GRADE.
- 19 CONCRETE ENCASE EX. SEWER MAIN UNDER RETAINING WALL FOOTING.
- 20 INSTALL 18" GRATE INLET AND 12" PVC STORM DRAIN.

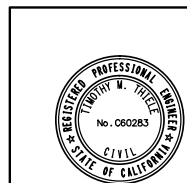
EXISTING EASEMENTS

- A 50' SEWER EASEMENT PER MAP #3982
- B 35' SD&E EASEMENT PER DOC #7271, Pg. 82



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IMPROVEMENT PLANS FOR:					
IMPROVEMENT PLAN MAIN STREET PROMENADE EXTENSION					
CITY OF LEMON GROVE, CALIFORNIA ENGINEERING DEPARTMENT SHEET 4 OF 15 SHEETS					
APPROVED					CONTRACT NO.
CITY ENGINEER	DATE				CITY ENGINEER
DESCRIPTION	DRAWN BY	APPROVED	DATE	FILMED	PROJECT MANAGER
ORIGINAL					
AS-BUILT					DESIGN ENGINEER
					631-1841
					NAD 83 COORDINATES
CONTRACTOR	DATE STARTED				
INSPECTOR	DATE COMPLETED				

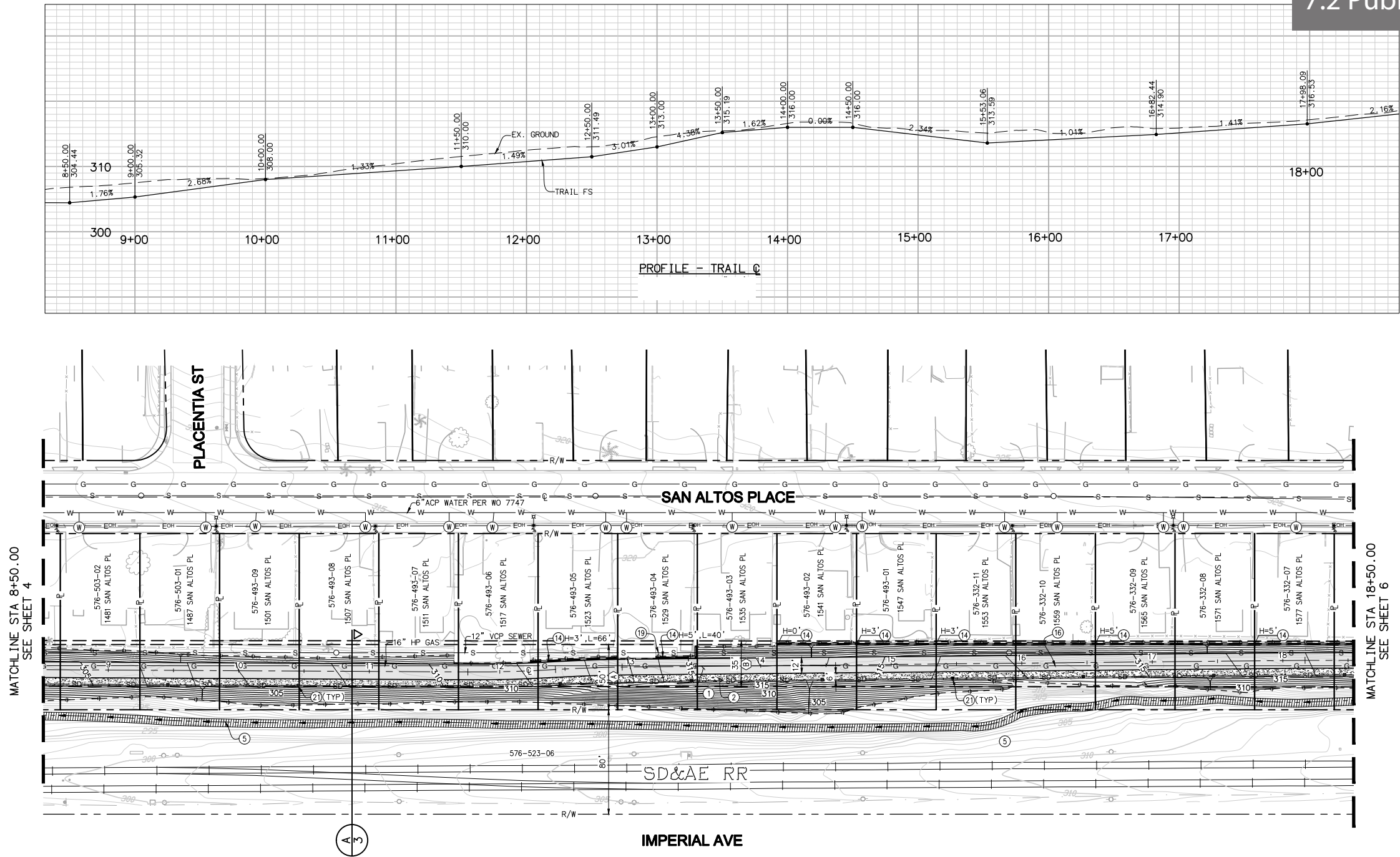
CONTRACTOR MUST NOTIFY THE  
BELOW LISTED AGENCY AT  
LEAST TWO (2) WORKING DAYS  
PRIOR TO COMMENCEMENT OF  
EXCAVATION :  
UNDERGROUND SERVICE ALERT  
(USA) 1-800-422-4133

HWD #S-15-026

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Figure 7-4: Public Improvement Plans - Sheet 4



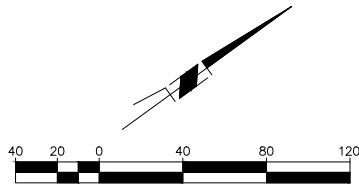


CONSTRUCTION NOTES

- MULTI-USE PAVED TRAIL. 3" ASPHALT OVER 6" CLASS II AGGREGATE BASE.
- DECOMPOSED GRANITE PEDESTRIAN PATHWAY. 4" DG OVER 6" CLASS II AGGREGATE BASE.
- RESTORE EXISTING NATURAL CHANNEL PER LANDSCAPE PLAN.
- MASONRY RETAINING WALL PER SDRSD C-2.
- EX. 16" HP GAS, MAINTAIN 36" MIN. COVER BELOW FINISH GRADE.
- CONCRETE ENCASE EX. SEWER MAIN UNDER RETAINING WALL FOOTING.
- INSTALL 18" GRATE INLET AND 12" PVC STORM DRAIN.

EXISTING EASEMENTS

- (A) 50' SEWER EASEMENT PER MAP #3982
- (B) 35' SD&AE EASEMENT PER DOC #7271, Pg. 82



**Michael Baker**  
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CONTRACTOR MUST NOTIFY THE BELOW LISTED AGENCY AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION :

UNDERGROUND SERVICE ALERT (USA) 1-800-422-4133

IMPROVEMENT PLANS FOR:					
IMPROVEMENT PLAN MAIN STREET PROMENADE EXTENSION					
CITY OF LEMON GROVE, CALIFORNIA ENGINEERING DEPARTMENT SHEET 5 OF 15 SHEETS				CONTRACT NO.	
APPROVED:					CITY ENGINEER
CITY ENGINEER	DATE				
DESCRIPTION	DRAWN BY	APPROVED	DATE	FILMED	PROJECT MANAGER
ORIGINAL					
AS-BUILT					DESIGN ENGINEER
					631-1842
					NAD 83 COORDINATES
CONTRACTOR	DATE STARTED				
INSPECTOR	DATE COMPLETED				

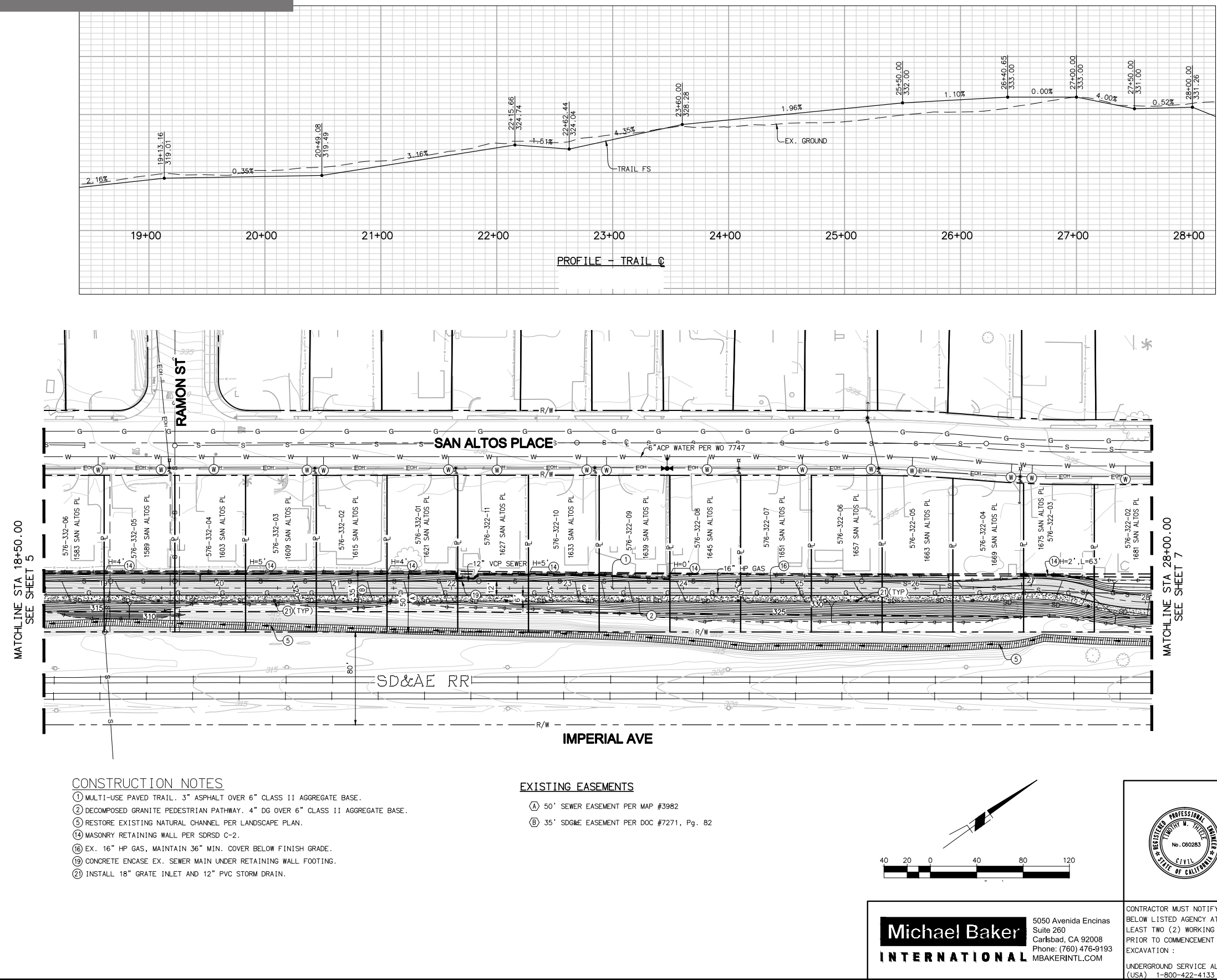
HWD #S-15-026

30% SUBMITTAL - NOT FOR CONSTRUCTION

Figure 7-5: Public Improvement Plans - Sheet 5



7.2 Public Improvement Plans

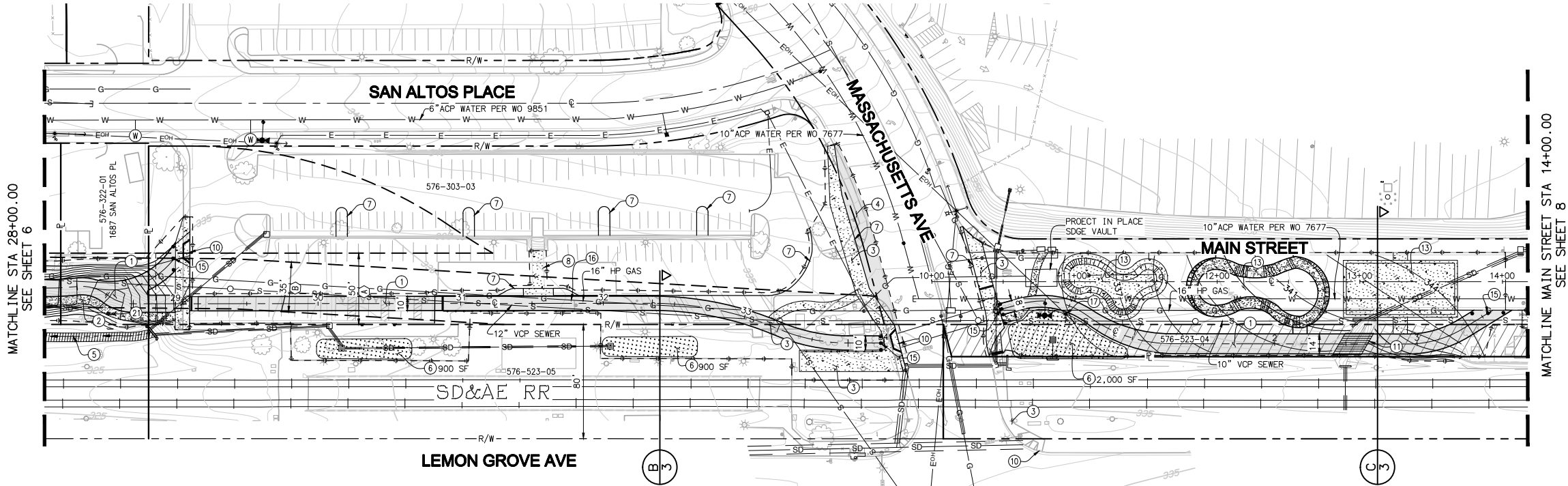
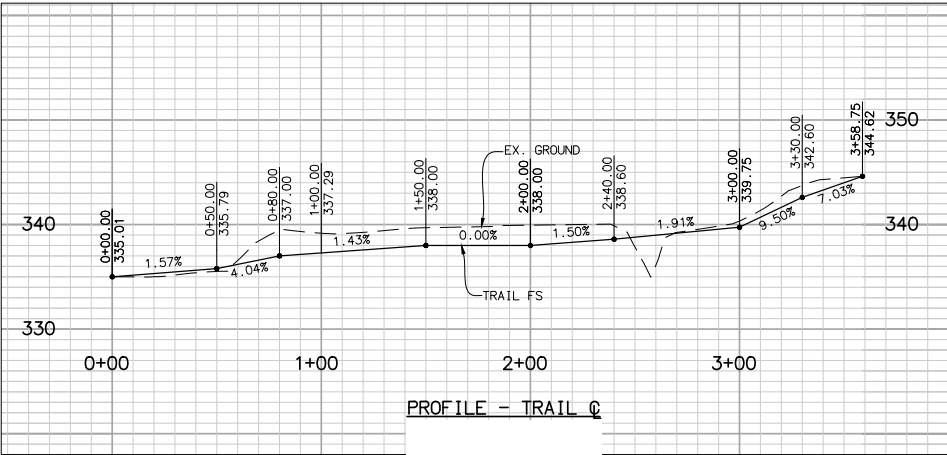
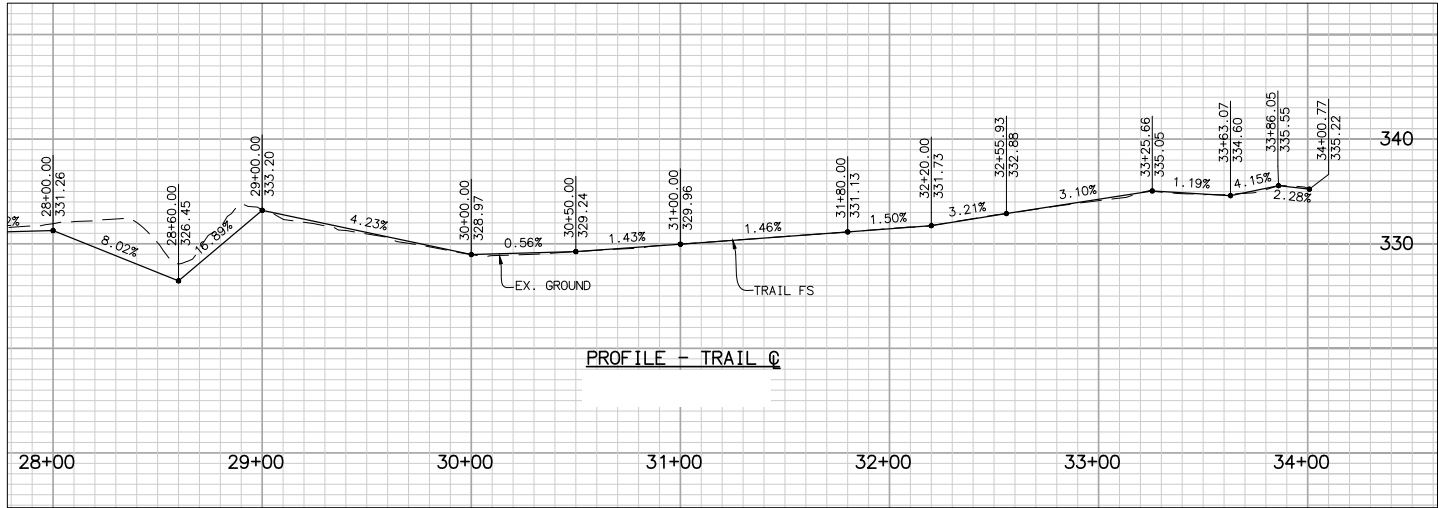


30% SUBMITTAL - NOT FOR CONSTRUCTION

Figure 7-6: Public Improvement Plans - Sheet 6

HWD #S-15-026





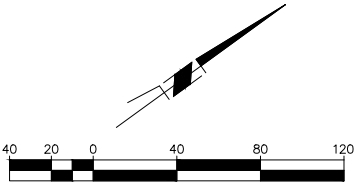
CONSTRUCTION NOTES

- 1 MULTI-USE PAVED TRAIL. 3" ASPHALT OVER 6" CLASS II AGGREGATE BASE.
- 2 DECOMPOSED GRANITE PEDESTRIAN PATHWAY. 4" DG OVER 6" CLASS II AGGREGATE BASE.
- 3 CONCRETE HARDSCAPE PER SDRSD G-7. FINISH PER LANDSCAPE PLAN.
- 4 ASPHALT ROADWAY PAVEMENT. 4" AC OVER 8" CLASS II AGGREGATE BASE.
- 5 RESTORE EXISTING NATURAL CHANNEL PER LANDSCAPE PLAN.
- 6 BIOFILTRATION BMP AREA PER DETAIL ON SHEET 3. INSTALL 24" CATCH BASIN OUTLET STRUCTURE WITH 12" PVC OUTFALL PIPE.
- 7 6" CONCRETE CURB PER SDRSD G-1.
- 8 RAISED CONCRETE CROSSWALK.
- 10 CURB RAMP PER SDRSD G-27.
- 11 BRIDGE OVER NATURAL CHANNEL PER SEPARATE PLAN.
- 13 EDUCATIONAL/RECREATIONAL AREA PER LANDSCAPE PLAN.
- 15 INSTALL BOLLARDS WHERE PROPOSED TRAIL ENTERS ROADWAY.
- 16 EX. 16" HP GAS, MAINTAIN 36" MIN. COVER BELOW FINISH GRADE.
- 17 RELOCATE EX. POWER POLE AND ANCHOR.
- 21 INSTALL 18" GRATE INLET AND 12" PVC STORM DRAIN.

EXISTING EASEMENTS

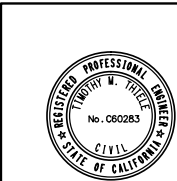
- A 50' SEWER EASEMENT PER MAP #3982
- B 35' SD&E EASEMENT PER DOC #7271, Pg. 82

UNION PACIFIC RIGHT-OF-WAY



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IMPROVEMENT PLANS FOR:					
IMPROVEMENT PLAN MAIN STREET PROMENADE EXTENSION					
CITY OF LEMON GROVE, CALIFORNIA ENGINEERING DEPARTMENT SHEET 7 OF 15 SHEETS				CONTRACT NO.	
APPROVED:		DATE		CITY ENGINEER	
CITY ENGINEER		DRAWN BY		PROJECT MANAGER	
DESIGNER		APPROVED		DESIGN ENGINEER	
AS-BUILT		DATE		631-1844	
CONTRACTOR		DATE STARTED		NAD 83 COORDINATES	
INSPECTOR		DATE COMPLETED			

CONTRACTOR MUST NOTIFY THE  
BELOW LISTED AGENCY AT  
LEAST TWO (2) WORKING DAYS  
PRIOR TO COMMENCEMENT OF  
EXCAVATION :

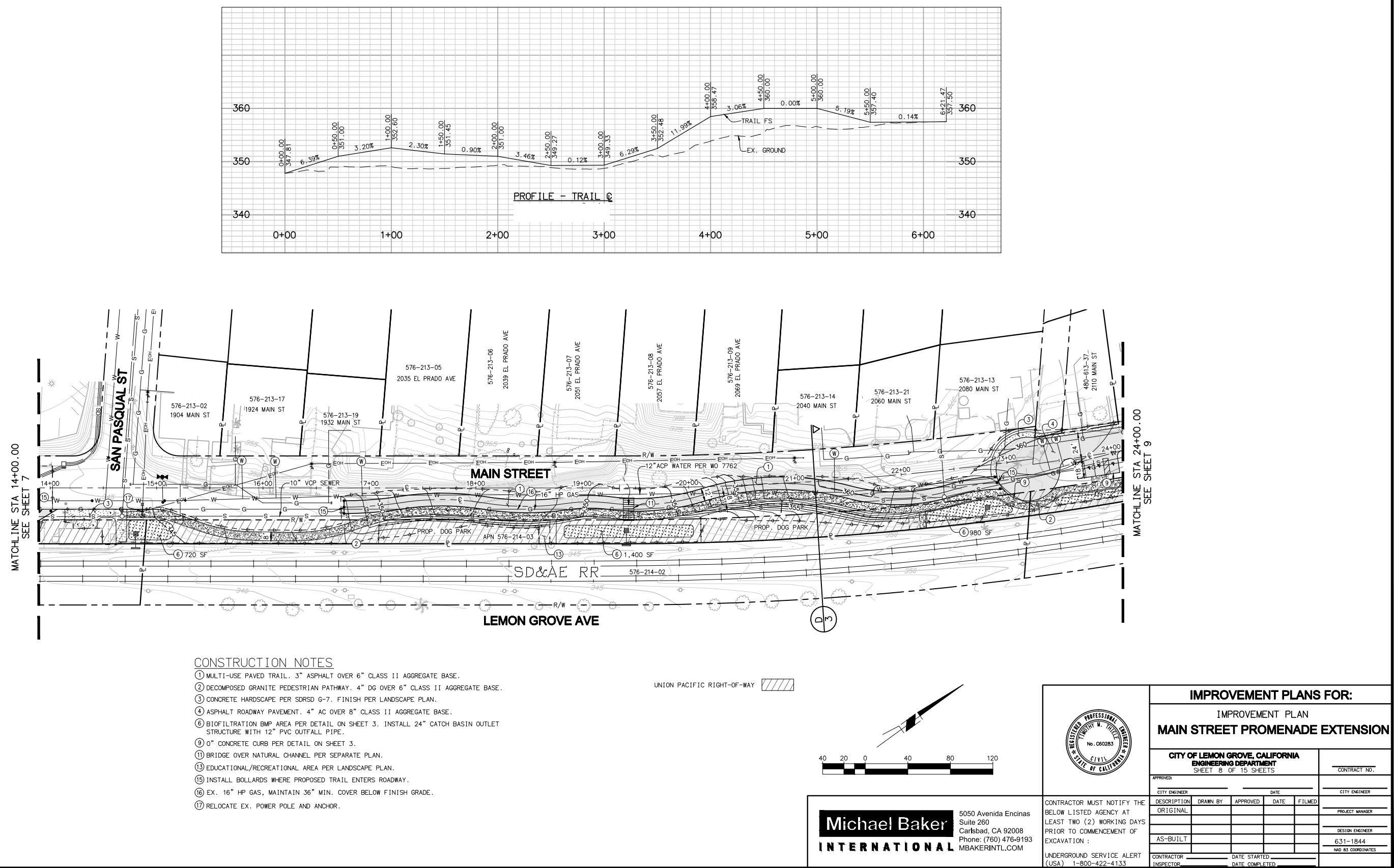
UNDERGROUND SERVICE ALERT  
(USA) 1-800-422-4133

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Figure 7-7: Public Improvement Plans - Sheet 7



7.2 Public Improvement Plans



30% SUBMITTAL - NOT FOR CONSTRUCTION

Figure 7-8: Public Improvement Plans - Sheet 8



30% SUBMITTAL - NOT FOR CONSTRUCTION

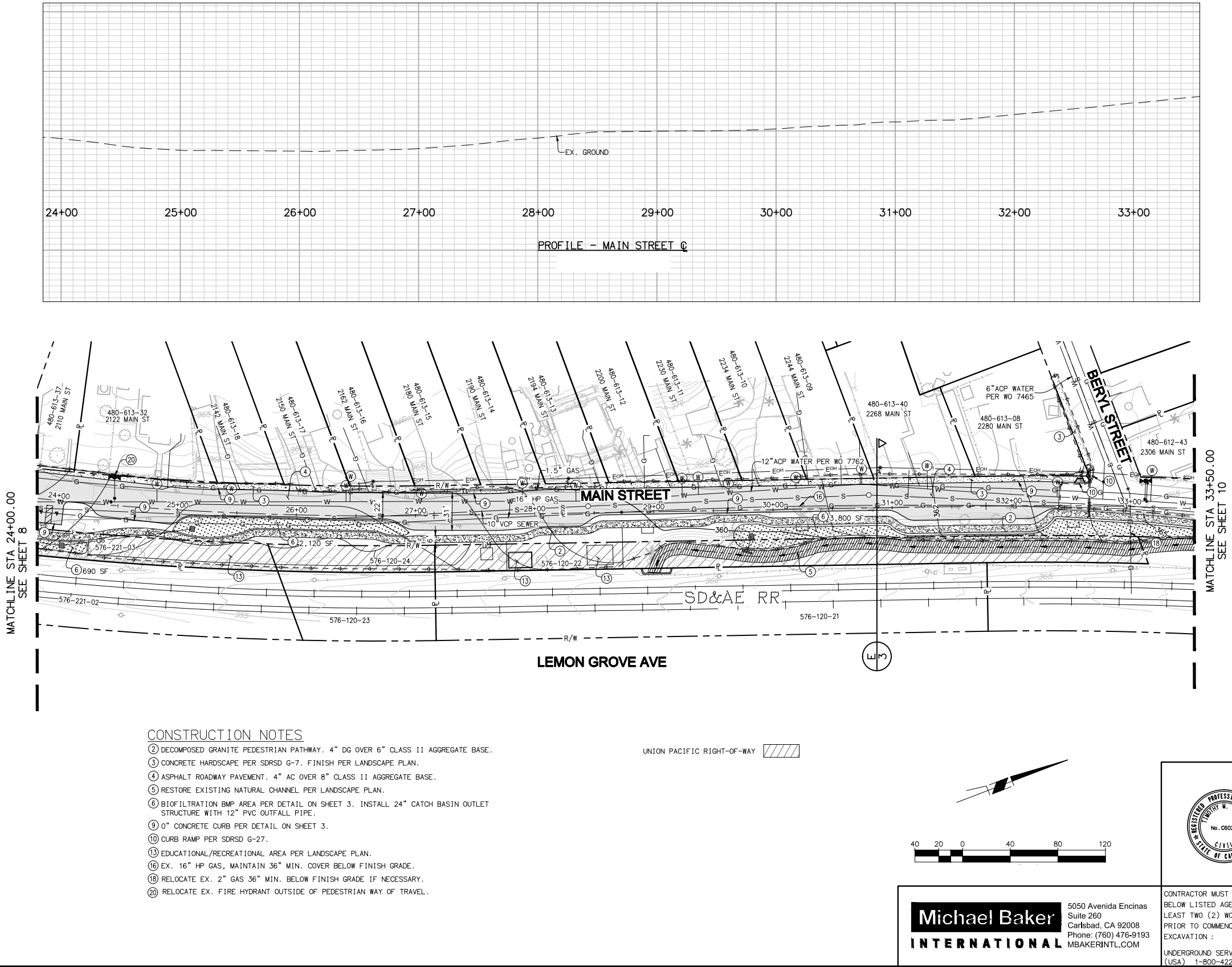
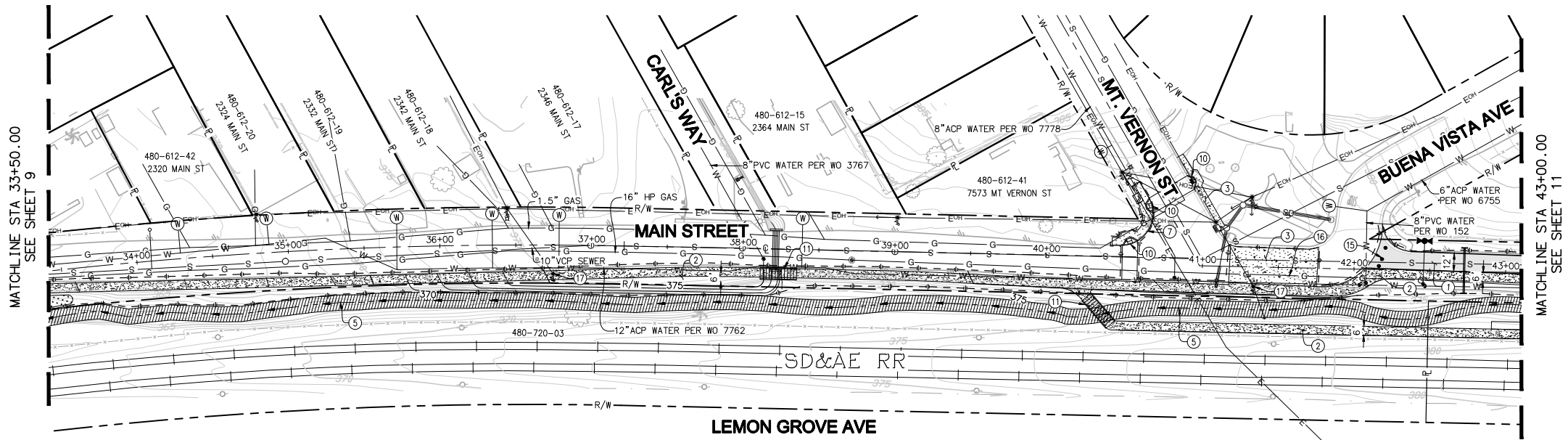
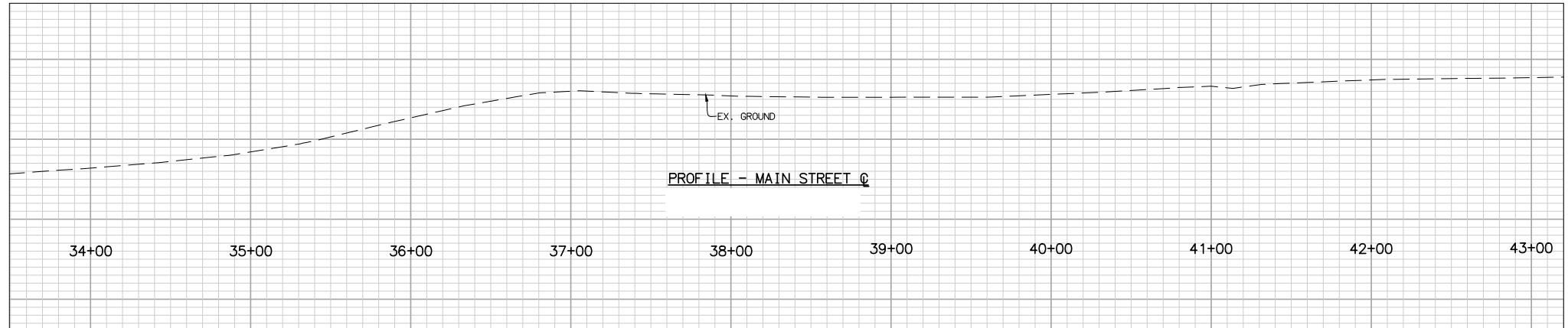


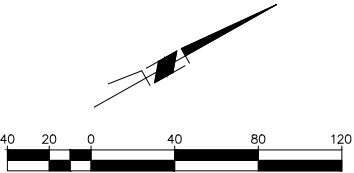
Figure 7-9: Public Improvement Plans - Sheet 9



7.2 Public Improvement Plans




- CONSTRUCTION NOTES
- ① MULTI-USE PAVED TRAIL, 3" ASPHALT OVER 6" CLASS II AGGREGATE BASE.
  - ② DECOMPOSED GRANITE PEDESTRIAN PATHWAY, 4" DG OVER 6" CLASS II AGGREGATE BASE.
  - ③ CONCRETE HARDSCAPE PER SDRSD G-7, FINISH PER LANDSCAPE PLAN.
  - ⑤ RESTORE EXISTING NATURAL CHANNEL PER LANDSCAPE PLAN.
  - ⑦ 6" CONCRETE CURB PER SDRSD G-1.
  - ⑩ CURB RAMP PER SDRSD G-27.
  - ⑪ BRIDGE OVER NATURAL CHANNEL PER SEPARATE PLAN.
  - ⑮ INSTALL BOLLARDS WHERE PROPOSED TRAIL ENTERS ROADWAY.
  - ⑯ EX. 16" HP GAS, MAINTAIN 36" MIN. COVER BELOW FINISH GRADE.
  - ⑰ RELOCATE EX. POWER POLE AND ANCHOR.



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		IMPROVEMENT PLANS FOR:	
		IMPROVEMENT PLAN MAIN STREET PROMENADE EXTENSION	
CITY OF LEMON GROVE, CALIFORNIA ENGINEERING DEPARTMENT SHEET 10 OF 15 SHEETS		CONTRACT NO.	
APPROVED:		CITY ENGINEER	
CITY ENGINEER	DATE	PROJECT MANAGER	
DESCRIPTION	DRAWN BY	APPROVED	DATE
ORIGINAL			
AS-BUILT			
CONTRACTOR		DATE STARTED	
INSPECTOR		DATE COMPLETED	
CONTRACTOR MUST NOTIFY THE BELOW LISTED AGENCY AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION:		DESIGN ENGINEER 6.32-1846 NAD 83 COORDINATES	
UNDERGROUND SERVICE ALERT (USA) 1-800-422-4133			

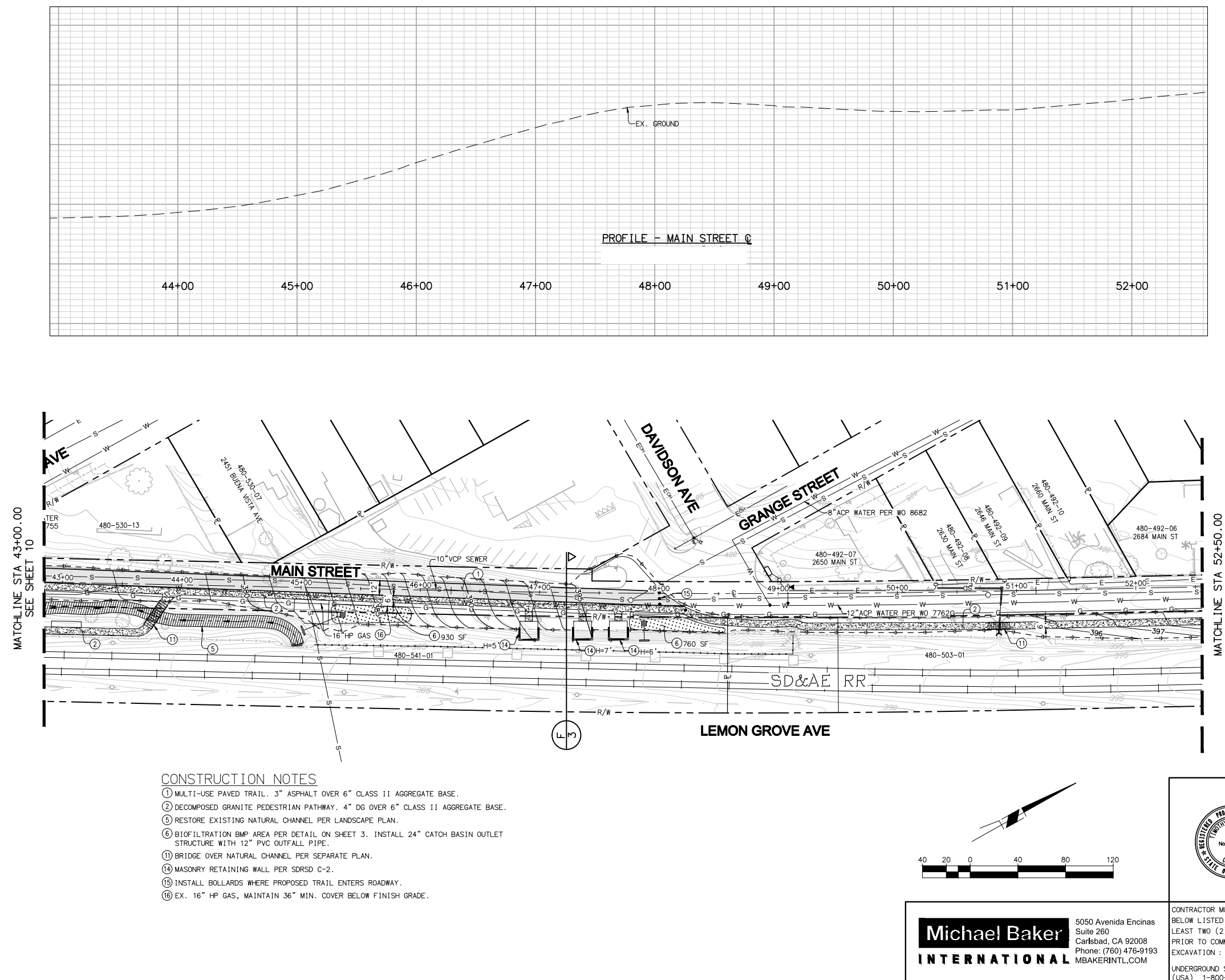
HWD #S-15-026

30% SUBMITTAL - NOT FOR CONSTRUCTION

Figure 7-10: Public Improvement Plans - Sheet 10



## 7.2 Public Improvement Plans

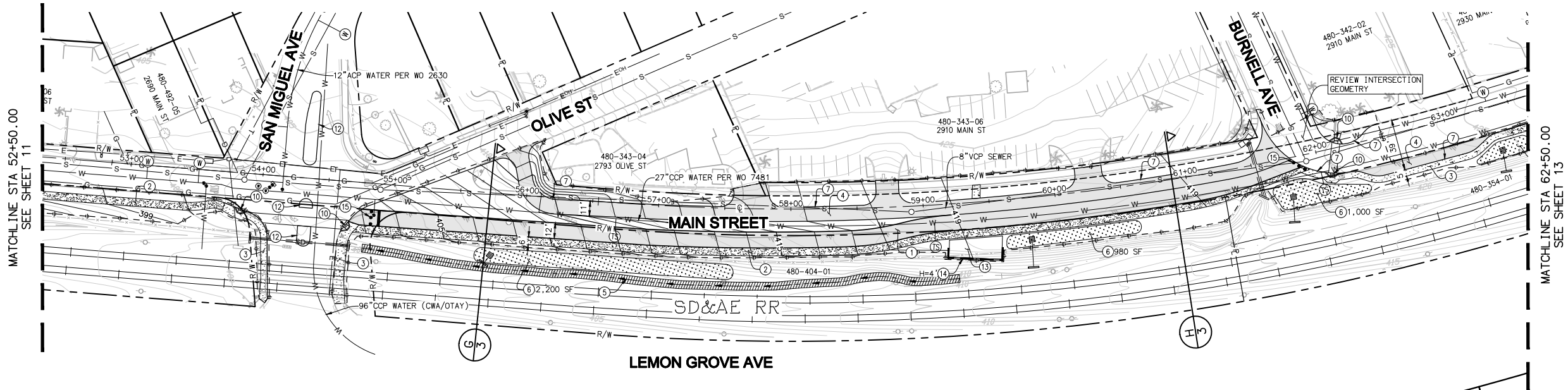


**30% SUBMITTAL - NOT FOR CONSTRUCTION**

**Figure 7-11: Public Improvement Plans - Sheet 11**

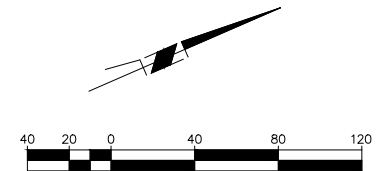


## 7.2 Public Improvement Plans



### CONSTRUCTION NOTES

- ① MULTI-USE PAVED TRAIL. 3" ASPHALT OVER 6" CLASS II AGGREGATE BASE.
- ② DECOMPOSED GRANITE PEDESTRIAN PATHWAY. 4" DG OVER 6" CLASS II AGGREGATE BASE.
- ③ CONCRETE HARDCAPE PER SDRSD G-7. FINISH PER LANDSCAPE PLAN.
- ④ ASPHALT ROADWAY PAVEMENT. 4" AC OVER 8" CLASS II AGGREGATE BASE.
- ⑤ RESTORE EXISTING NATURAL CHANNEL PER LANDSCAPE PLAN.
- ⑥ BIOFILTRATION BMP AREA PER DETAIL ON SHEET 3. INSTALL 24" CATCH BASIN OUTLET STRUCTURE WITH 12" PVC OUTFALL PIPE.
- ⑦ 6" CONCRETE CURB PER SDRSD G-1.
- ⑧ CURB RAMP PER SDRSD G-27.
- ⑨ 6" MEDIAN CURB PER SDRSD G-6.
- ⑩ EDUCATIONAL/RECREATIONAL AREA PER LANDSCAPE PLAN.
- ⑪ MASONRY RETAINING WALL PER SDRSD C-2.
- ⑫ INSTALL BOLLARDS WHERE PROPOSED TRAIL ENTERS ROADWAY.



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CONTRACTOR MUST NOTIFY THE BELOW LISTED AGENCY AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION :
UNDERGROUND SERVICE ALERT (USA) 1-800-422-4133

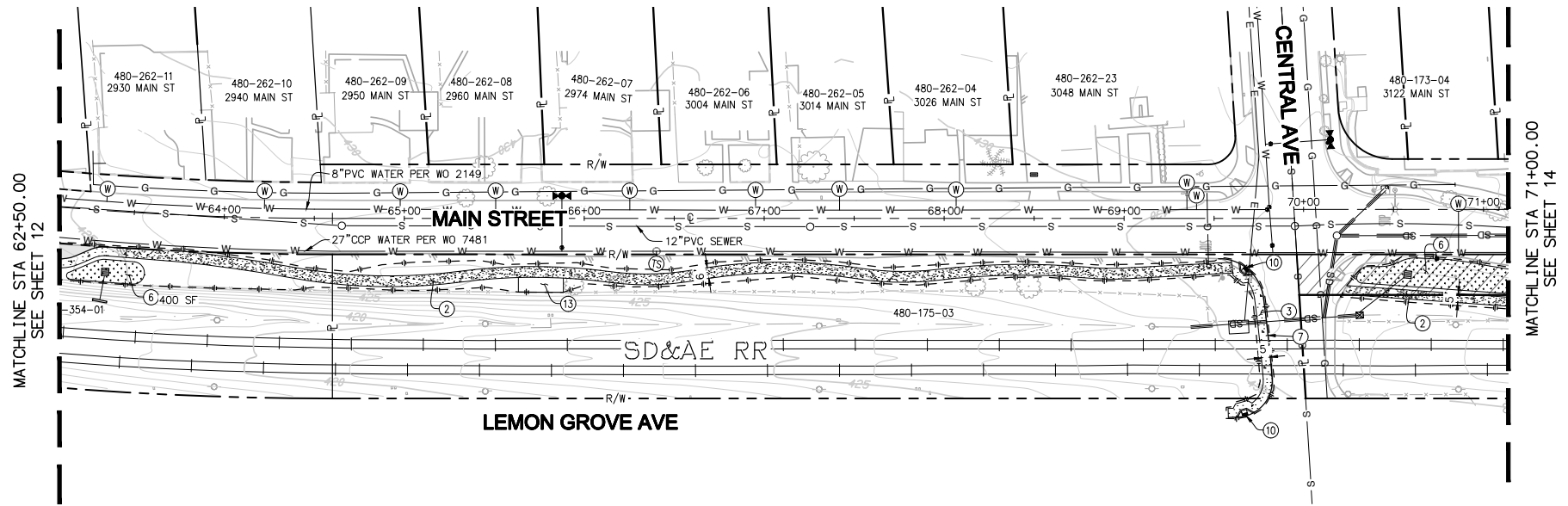
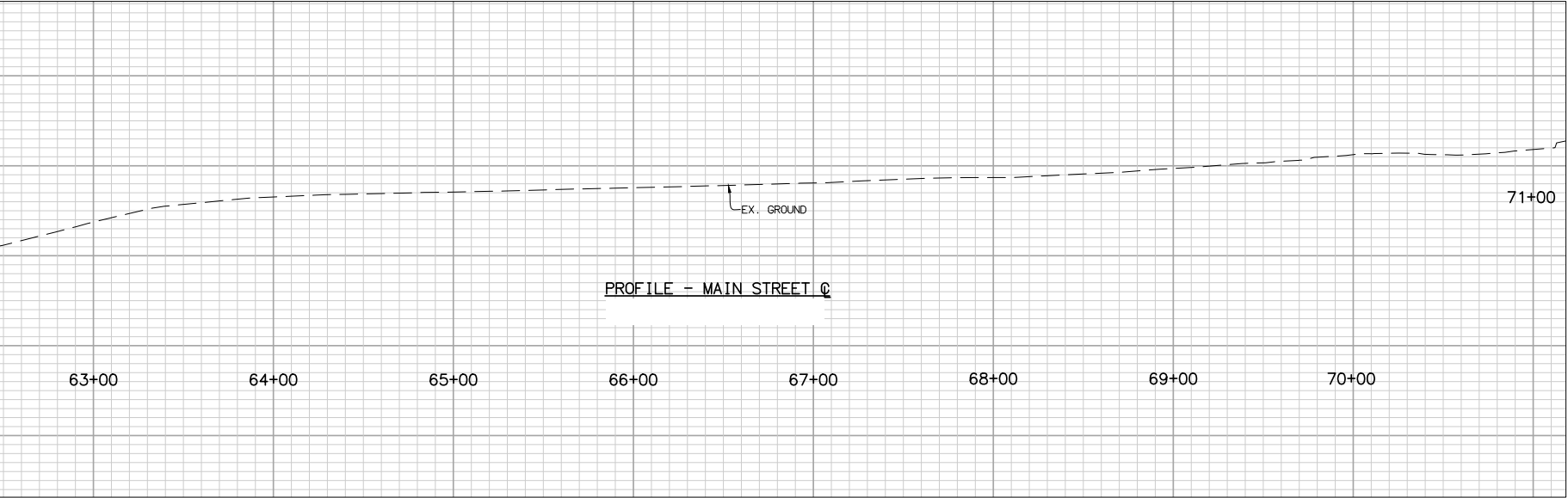
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<h2 style="margin: 0;">IMPROVEMENT PLAN</h2>					
<h1 style="margin: 0;">MAIN STREET PROMENADE EXTENSION</h1>					
<b>CITY OF LEMON GROVE, CALIFORNIA</b> <b>ENGINEERING DEPARTMENT</b> SHEET 12 OF 15 SHEETS					
APPROVED: _____					CONTRACT NO. _____
CITY ENGINEER _____			DATE _____		
DESCRIPTION ORIGINAL	DRAWN BY _____	APPROVED _____	DATE _____	FILED _____	CITY ENGINEER _____
_____	_____	_____	_____	_____	PROJECT MANAGER _____
_____	_____	_____	_____	_____	DESIGN ENGINEER _____
AS-BUILT _____	_____	_____	_____	_____	632-1848
CONTRACTOR _____		DATE STARTED _____			
INSPECTOR _____		DATE COMPLETED _____			
_____					NAD 83 COORDINATES _____

HWD #S-15-026

**30% SUBMITTAL - NOT FOR CONSTRUCTION**

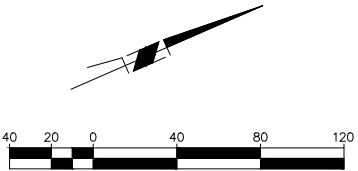
**Figure 7-12: Public Improvement Plans - Sheet 12**






- CONSTRUCTION NOTES
- ② DECOMPOSED GRANITE PEDESTRIAN PATHWAY. 4" DG OVER 6" CLASS II AGGREGATE BASE.
  - ③ CONCRETE HARDSCAPE PER SDRSD G-7. FINISH PER LANDSCAPE PLAN.
  - ④ ASPHALT ROADWAY PAVEMENT. 4" AC OVER 8" CLASS II AGGREGATE BASE.
  - ⑥ BIOFILTRATION BMP AREA PER DETAIL ON SHEET 3. INSTALL 24" CATCH BASIN OUTLET STRUCTURE WITH 12" PVC OUTFALL PIPE.
  - ⑦ 6" CONCRETE CURB PER SDRSD G-1.
  - ⑩ CURB RAMP PER SDRSD G-27.
  - ⑬ EDUCATIONAL/RECREATIONAL AREA PER LANDSCAPE PLAN.

UNION PACIFIC RIGHT-OF-WAY



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		<b>IMPROVEMENT PLANS FOR:</b>			
		IMPROVEMENT PLAN <b>MAIN STREET PROMENADE EXTENSION</b>			
CITY OF LEMON GROVE, CALIFORNIA ENGINEERING DEPARTMENT SHEET 13 OF 15 SHEETS		CONTRACT NO.			
APPROVED:		DATE		CITY ENGINEER	
CITY ENGINEER	DRAWN BY	APPROVED	DATE	FILMED	PROJECT MANAGER
ORIGINAL					
AS-BUILT					DESIGN ENGINEER
					632-1849
					NAD 83 COORDINATES
CONTRACTOR	DATE STARTED				
INSPECTOR	DATE COMPLETED				

CONTRACTOR MUST NOTIFY THE BELOW LISTED AGENCY AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION :

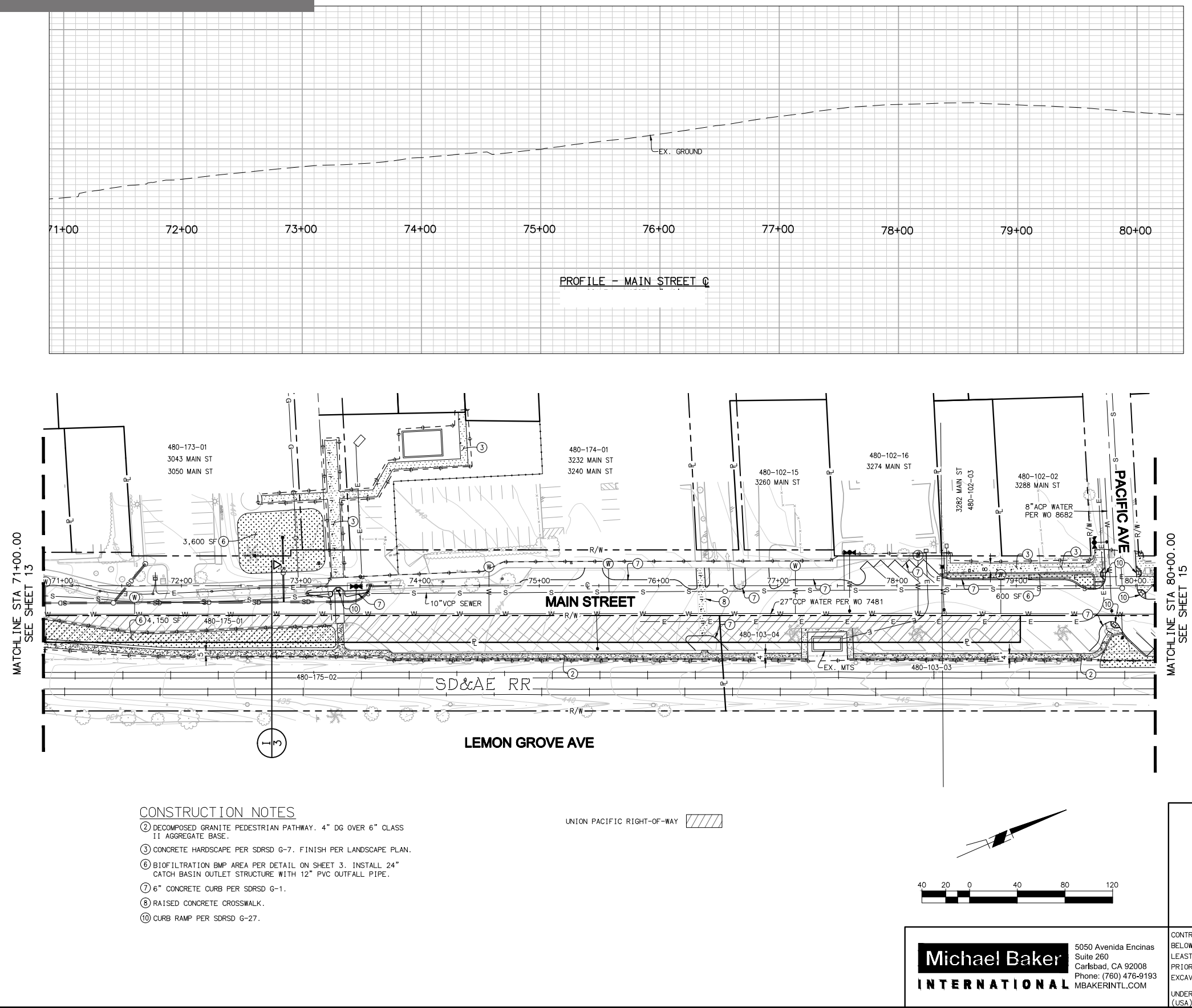
UNDERGROUND SERVICE ALERT (USA) 1-800-422-4133

30% SUBMITTAL - NOT FOR CONSTRUCTION

Figure 7-13: Public Improvement Plans - Sheet 13



7.2 Public Improvement Plans

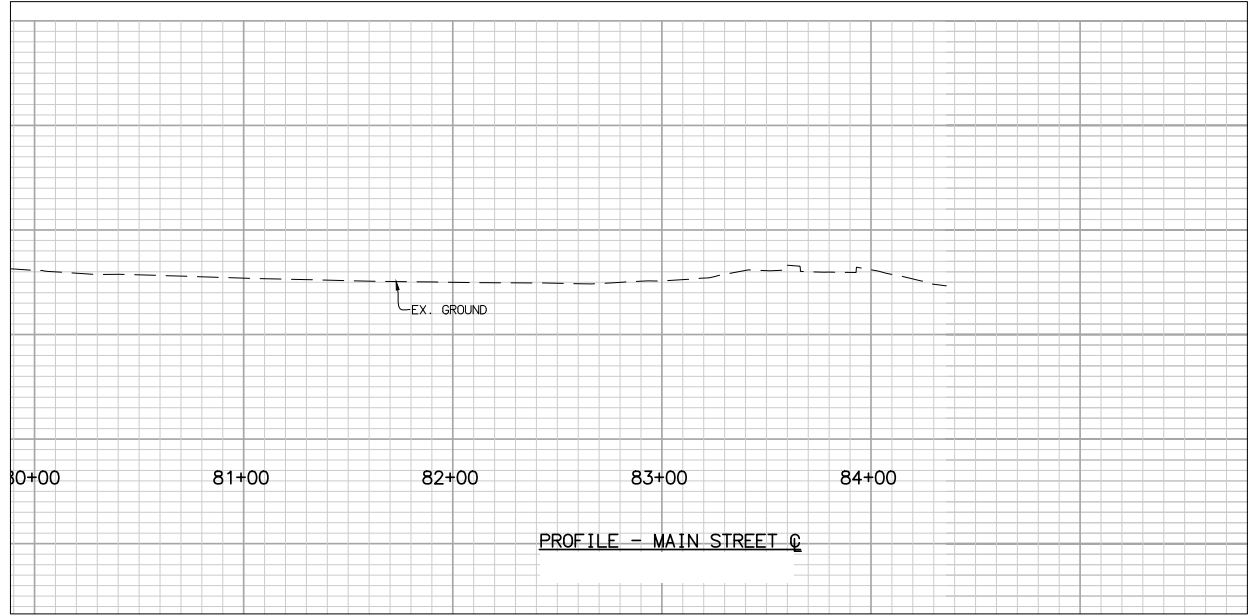


30% SUBMITTAL - NOT FOR CONSTRUCTION

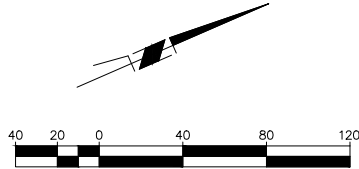
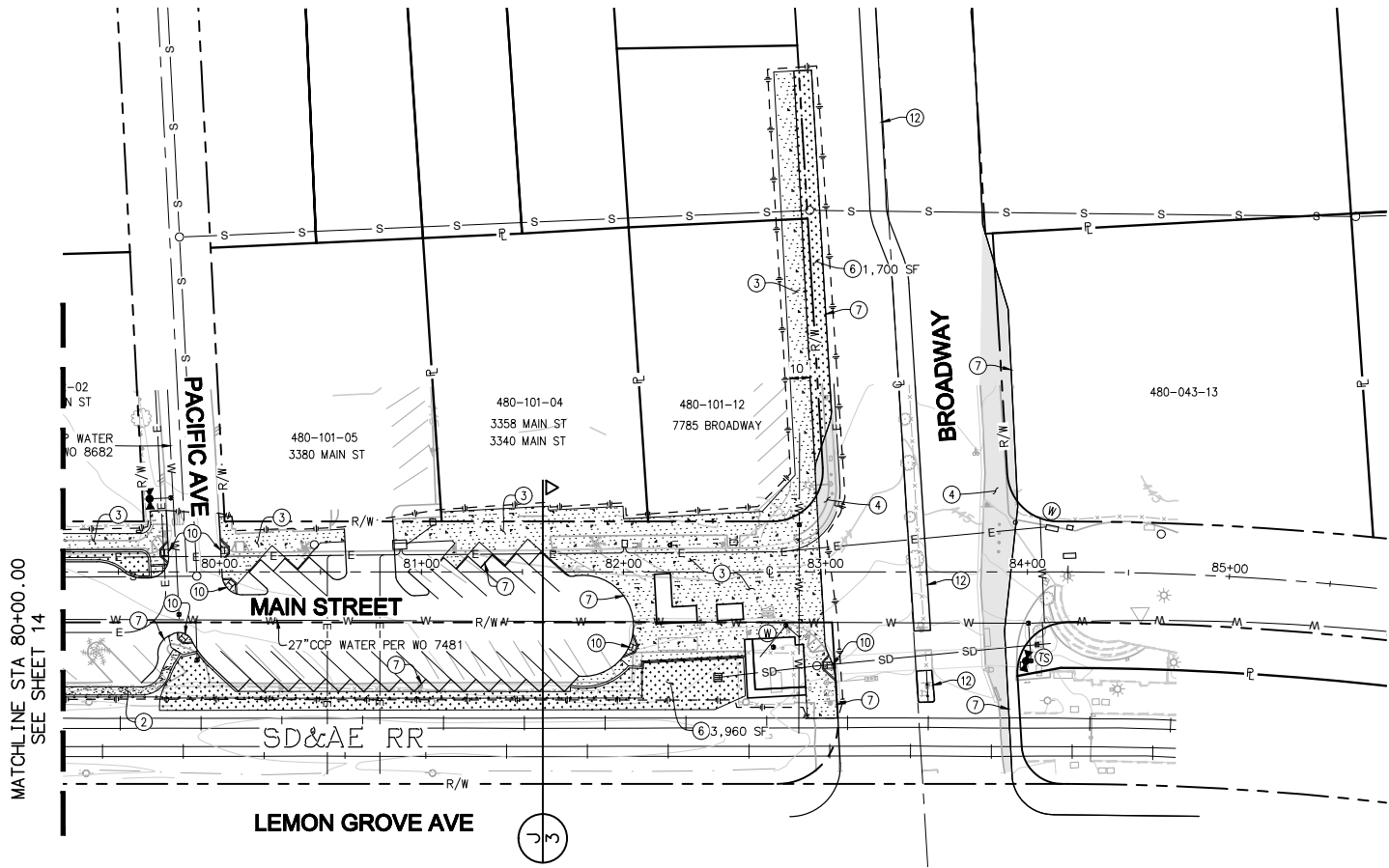
Figure 7-14: Public Improvement Plans - Sheet 14




30% SUBMITTAL - NOT FOR CONSTRUCTION



- CONSTRUCTION NOTES
- ② DECOMPOSED GRANITE PEDESTRIAN PATHWAY. 4" DG OVER 6" CLASS II AGGREGATE BASE.
  - ③ CONCRETE HARDSCAPE PER SDRSD G-7. FINISH PER LANDSCAPE PLAN.
  - ④ ASPHALT ROADWAY PAVEMENT. 4" AC OVER 8" CLASS II AGGREGATE BASE.
  - ⑥ BIOFILTRATION BMP AREA PER DETAIL ON SHEET 3. INSTALL 24" CATCH BASIN OUTLET STRUCTURE WITH 12" PVC OUTFALL PIPE.
  - ⑦ 6" CONCRETE CURB PER SDRSD G-1.
  - ⑩ CURB RAMP PER SDRSD G-27.
  - ⑫ 6" MEDIAN CURB PER SDRSD G-6.



		IMPROVEMENT PLANS FOR:			
		IMPROVEMENT PLAN MAIN STREET PROMENADE EXTENSION			
CITY OF LEMON GROVE, CALIFORNIA ENGINEERING DEPARTMENT SHEET 15 OF 15 SHEETS		CONTRACT NO.			
APPROVED:		CITY ENGINEER		DATE	
CITY ENGINEER		DATE		FILMED	
DESCRIPTION		DRAWN BY		APPROVED	
ORIGINAL		DATE		PROJECT MANAGER	
AS-BUILT		DATE		DESIGN ENGINEER	
CONTRACTOR		DATE STARTED		NAD 83 COORDINATES	
INSPECTOR		DATE COMPLETED			

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CONTRACTOR MUST NOTIFY THE BELOW LISTED AGENCY AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION :

UNDERGROUND SERVICE ALERT (USA) 1-800-422-4133

HWD #S-15-026

Figure 7-15: Public Improvement Plans - Sheet 15



# 8 | Project Phasing

## 8.1 Phasing Statement & Map

Phasing can be arranged based on a constructibility perspective where logical phases and sequencing of construction may suggest an order to the project. Phasing can also be arranged by public priority based on receiving the greatest return on benefits for the greatest number of individuals. Or, phasing can be based on ease of implementation or the availability of funds. Below is a simple phasing plan that starts with the existing improvements that end on the north side of Broadway and work their way down to the southern city limits.

It should be noted that all of the recommended phases could change in priority given grant funding sources or the need to work from the two LRT stations both northward and southward to provide first and last mile connectivity improvements that are often required by some transportation grant sources.

Phasing of circulation improvements and street elements should focus first on providing pedestrian and bicycle paths, street trees, and storm water improvements. Secondary priorities should include public art, gateways, street and park amenities, and lighting. These should be considered after safety and connectivity issues are first satisfied.

**PHASE 1:** Phase 1 would be the logical extension of the Main Street Promenade located to the north of Broadway. An interim or short term implementation of this segment has been proposed and will be moving forward in the near future. The long term phase may include street closures or partial street closures and the development of a large plaza- as shown on the long-term concept plan and the public improvement plan sets. The full implementation of this segment would depend on the adjacent redevelopment efforts of the property owners of this large block, and on plans by MTS for rebuilding the transit stops, the City of Lemon Grove for other changes at City Hall and Civic Center Park as well as the street closure.

**PHASE 2:** The Central to San Miguel segment is suggested to be constructed as part of Phase 2. This would be a logical extension of Phase 1 and would increase the reach of the facility and provide for amenities for the nearby neighborhoods. This would also be the first phase where a partial street closure would be implemented from Burnell to San Miguel.

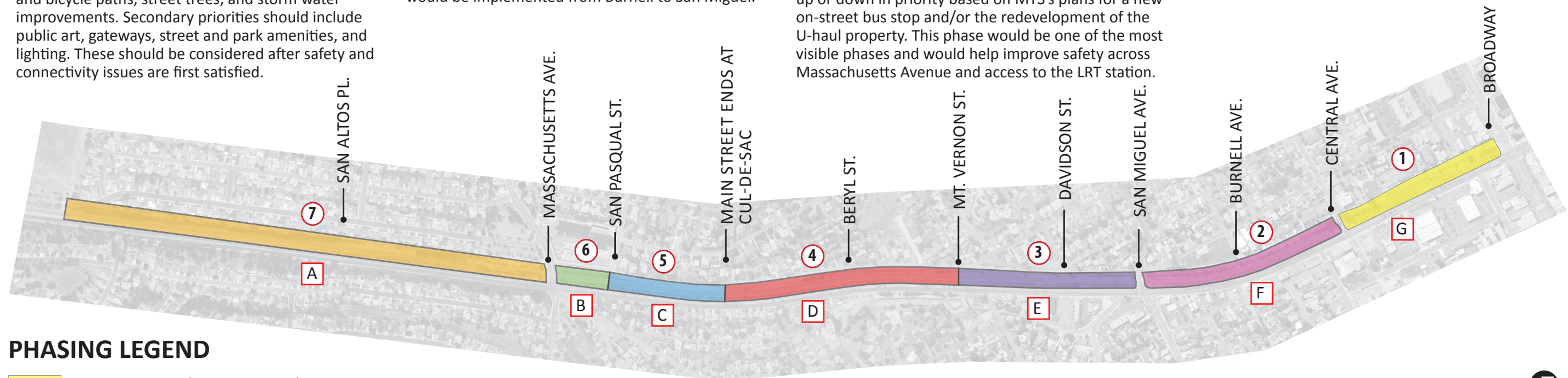
**PHASE 3:** San Miguel to Mt. Vernon segment will require a street closure from Davidson to Mt. Vernon. Implementing a potentially controversial segment would benefit from the previous two phases to show the success of the trail and the desire to keep constructing phases southward.

**PHASE 4:** The Mt. Vernon to Main St. Cul-de-sac is another logical location that ties in with the current street closure at south of Beryl. This segment is slightly longer than most of the other segments, except 7.

**PHASE 5 & 6:** This segment from the Cul-de-sac north of San Pasqual St. to San Pasqual and then again to Massachusetts Avenue, was originally chosen as the first logical phase for the project since the roadway is already closed and the improvements could be used to improve security and remove some of the dumping and loitering problems that already exist. Phase 6 from San Pasqual to Massachusetts could go up or down in priority based on MTS's plans for a new on-street bus stop and/or the redevelopment of the U-haul property. This phase would be one of the most visible phases and would help improve safety across Massachusetts Avenue and access to the LRT station.

Short term construction changes may occur along this segment in the near future to accommodate SDG &E gas pipeline and valve control equipment for the gas line that runs through this segment. However, an overall logical progression of segments that would avoid leaving any gaps of facilities was finally selected as the order of the phasing.

**PHASE 7:** Finally, the trail segment extending from Massachusetts Ave. to the city's boundary in the south would be the last logical phase given the requirements of property owner approval and easement dedications and adjustments. Given the potentially high level of concern from these property owners, providing time to see and use the other segments of the trail system may provide increased acceptance and motivation to allow the final segment to be constructed.



### PHASING LEGEND

- |  |  |
|--|--|
| <span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> PHASE 1: Broadway to Central            | <span style="background-color: blue; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> PHASE 5: Main St. Cul-de-sac to San Pasqual |
| <span style="background-color: pink; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> PHASE 2: Central to San Miguel            | <span style="background-color: green; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> PHASE 6: San Pasqual to Massachusetts Ave. |
| <span style="background-color: purple; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> PHASE 3: San Miguel to Mt. Vernon       | <span style="background-color: orange; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> PHASE 7: Massachusetts Ave. to San Altos  |
| <span style="background-color: red; border: 1px solid black; display: inline-block; width: 20px; height: 10px;"></span> PHASE 4: Mt. Vernon to Main St. Cul-de-sac |  |

### PHASING MAP

A Cost Estimate Section # Phase #

Figure 8-1: Phasing Map



9.1 Exceptions & Assumptions

Cost estimates at a conceptual phase are potentially difficult to use since there may be a number of unknown factors that could dramatically increase the project costs. However, the Public Improvement Plan sets are considered to be at a 30% complete level, where all major cost items are included. The unknown factors that may become known later, should be covered with the 15% contingency built into all numbers. These numbers should be used for segment comparisons, for preliminary budget programming and for applying for grants and other funding sources. The listed assumptions are very important to understand and may be the basis of reducing the overall costs if other conditions are resolved that may have been included or excluded from the estimates.

See Table 1 on this page for an overview of preliminary construction costs. For more information see Tables 2 through 9 on the following pages.

COST ASSUMPTIONS

- 1. All costs are preliminary in nature and should be used for conceptual programming only.
- 2. Creek improvement costs are mostly for invasive removal and re-grading and slope stabilization. A cost of \$2/SF has been included for invasive removal and native plantings and hydroseeding for basic erosion control and slope stabilization. An additional \$3/SF should be included for planting more extensive native revegetation of these areas if restoration of the creek is being considered. This revegetation would not be for biological mitigation purposes and does not include costs associated with permit processing, monitoring or maintenance requirements for biological mitigation purposes. These may be required at some future point in the evolution of the plans, but have not been included in these numbers.
- 3. Costs of lighting are assumed to be pedestrian level lighting in active park areas and not along the full trail except for along San Altos Place behind the homes.
- 4. Utility burial costs are not included since the franchise agreement shifts costs onto SDG&E and Helix Irrigation District.
- 5. Costs for four new bus stops has been included, but may end up being a cost shared with MTS.
- 6. Costs for land acquisition are for Union Pacific Sliver parcels and makes the assumption that these parcels have no development potential because of their size and location.
- 7. Palm tree removal could be significantly less if a contractor salvaged palms for reuse.
- 8. Roadway surface improvements are not included since a different source of repair and maintenance is assumed to be available (\$8/SF).
- 9. Costs are in 2016 dollars and need to be projected to the year of potential project implementation .

9.2 Preliminary Cost Estimates

Table 1. Overview of Preliminary Construction Costs

<b>A. SAN ALTOS - MASSACHUSETTS AVE.</b>				
Site Preparation Subtotal				\$1,465,550
Construction Subtotal				\$540,900
Planting Subtotal				\$1,116,325
Acquisition, Soft Costs, and Contingencies Subtotal				\$1,155,427
Length in Feet:	3,650	\$ per Ft:	\$1,172	<b>Total \$4,278,202</b>
<b>B. MASSACHUSETTS AVE. - SAN PASQUAL</b>				
Site Preparation Subtotal				\$54,035
Construction Subtotal				\$638,500
Planting Subtotal				\$47,520
Acquisition, Soft Costs, and Contingencies Subtotal				\$291,300
Length in Feet:	480	\$ per Ft:	\$2,149	<b>Total \$1,031,355</b>
<b>C. SAN PASQUAL - MAIN ST. CUL-DE-SAC</b>				
Site Preparation Subtotal				\$181,260
Construction Subtotal				\$342,100
Planting Subtotal				\$200,850
Acquisition, Soft Costs, and Contingencies Subtotal				\$307,058
Length in Feet:	900	\$ per Ft:	\$1,146	<b>Total \$1,031,268</b>
<b>D. MAIN ST. CUL-DE-SAC - MT. VERNON</b>				
Site Preparation Subtotal				\$218,625
Construction Subtotal				\$369,900
Planting Subtotal				\$461,588
Acquisition, Soft Costs, and Contingencies Subtotal				\$435,002
Length in Feet:	1,750	\$ per Ft:	\$849	<b>Total \$1,485,114</b>
<b>E. MT. VERNON - SAN MIGUEL</b>				
Site Preparation Subtotal				\$208,900
Construction Subtotal				\$332,250
Planting Subtotal				\$196,815
Acquisition, Soft Costs, and Contingencies Subtotal				\$273,047
Length in Feet:	1,310	\$ per Ft:	\$772	<b>Total \$1,011,012</b>
<b>F. SAN MIGUEL - CENTRAL</b>				
Site Preparation Subtotal				\$97,825
Construction Subtotal				\$337,100
Planting Subtotal				\$202,158
Acquisition, Soft Costs, and Contingencies Subtotal				\$235,721
Length in Feet:	1,580	\$ per Ft:	\$552	<b>Total \$872,803</b>
<b>G. CENTRAL - BROADWAY</b>				
Site Preparation Subtotal				\$166,655
Construction Subtotal				\$474,100
Planting Subtotal				\$520,505
Acquisition, Soft Costs, and Contingencies Subtotal				\$471,066
Length in Feet:	1,330	\$ per Ft:	\$1,227	<b>Total \$1,632,326</b>
<b>TOTAL</b>				<b>\$11,342,080</b>
Total Length in Feet:				11,000
Cost per Lineal Foot:				\$1,031
Total Assumed Land Acquisition \$ for Union Pacific Sliver Parcels:				\$144,440
Total Land Acquisition in SF:				62,800
Total Land Acquisition in Acres:				1.44
Assumed Cost per SF from Union Pacific:				\$2.30
Assumed Cost per Acre from Union Pacific:				\$100,188



Table 2. Preliminary Construction Costs per Segment “A”

A. SAN ALTOS - MASSACHUSETTS AVE.

SITE PREPARATION	QTY	UNIT	PRICE	TOTAL
Tree removals				
Washingtonia palms (quantity approximate)	240	EA	\$1,200.00	\$288,000
Canopy trees (quantity approximate)	30	EA	\$600.00	\$18,000
Clear & grub	295,000	SF	\$0.75	\$221,250
Creek stabilization & re-grading	3,200	LF	\$75.00	\$240,000
Finish grading	295,000	SF	\$0.20	\$59,000
Retaining Walls	9,746	SF	\$50.00	\$487,300
Soil amendment	240,000	SF	\$0.50	\$120,000
Demolition & removal of concrete drainage channel	600	LF	\$23.50	\$14,100
Demolition & removal of asphalt pavement	6,750	SF	\$2.00	\$13,500
Demolition & removal of concrete walkways	2,200	SF	\$2.00	\$4,400
<b>SUBTOTAL</b>				<b>\$1,465,550</b>
CONSTRUCTION	QTY	UNIT	PRICE	TOTAL
Concrete 4" thick	3,000	SF	\$8.00	\$24,000
Concrete curb ramps	5	EA	\$2,500.00	\$12,500
Asphalt multi-use trail - 4" depth	38,700	SF	\$4.00	\$154,800
Decomposed granite 4" thick stabilized path w/ edging	18,100	SF	\$4.00	\$72,400
Decomposed granite 4" thick stabilized surface w/ edging	2,000	SF	\$2.00	\$4,000
Pedestrian fence	140	LF	\$10.00	\$1,400
Striping				
Crosswalks	3	EA	\$500.00	\$1,500
Bike & lane striping	3,500	LF	\$2.00	\$7,000
Horseshoe/Bocce court	1	LS	\$5,000.00	\$5,000
Gateway structures	2	EA	\$10,000.00	\$20,000
Retail kiosk	1	EA	\$4,000.00	\$4,000
Bus shelter	1	EA	\$20,000.00	\$20,000
Special signal (HAWK or RRFB) with actuators	1	EA	\$50,000.00	\$50,000
Signs				
Trail kiosk	1	EA	\$1,500.00	\$1,500
Interpretive signs	2	EA	\$1,000.00	\$2,000
Bike signs	2	EA	\$250.00	\$500
Site Furniture				
Picnic tables	3	EA	\$2,000.00	\$6,000
Benches	1	EA	\$1,500.00	\$1,500
Trash/Recycle receptacles	4	EA	\$750.00	\$3,000
Bike bollards	12	EA	\$400.00	\$4,800
Lighting	2,900	LF	\$50.00	\$145,000
<b>SUBTOTAL</b>				<b>\$540,900</b>
PLANTING	QTY	UNIT	PRICE	TOTAL
Trees				
Accent Trees - 24" Box	22	EA	\$300.00	\$6,600
Street Trees - 24" Box	8	EA	\$275.00	\$2,200
Canopy Trees - 24" Box	240	EA	\$250.00	\$60,000
Shrubs (40% 5 GAL. @ 60" O.C. 60% 1 GAL. @ 40" O.C.)	120,000	SF	\$1.75	\$210,000
Shredded Mulch - 3" deep in shrub areas	120,000	SF	\$0.30	\$36,000
Bioretention areas with 12" PVC drain pipe & outlet structure	8,700	SF	\$27.00	\$234,900
Irrigation				
Tree Flood Bubblers	270	EA	\$50.00	\$13,500
Shrub Spider Spray Bubblers	147,500	SF	\$2.00	\$295,000
Groundcover Overhead Spray	147,500	SF	\$1.75	\$258,125
<b>SUBTOTAL</b>				<b>\$1,116,325</b>
ACQUISITION, SOFT COSTS, & CONTINGENCIES	QTY	UNIT	PRICE	TOTAL
Conceptual design contingency	\$3,122,775	%	15%	\$468,416
Final design & engineering	\$3,122,775	%	10%	\$312,278
Environmental review & permits	\$3,122,775	%	5%	\$156,139
Construction management	\$3,122,775	%	5%	\$156,139
Insurance & performance bonds	\$3,122,775	%	2%	\$62,456
<b>SUBTOTAL</b>				<b>\$1,155,427</b>
<b>GRAND TOTAL FOR STUDY AREA "A"</b>				<b>\$4,278,202</b>

Table 3. Preliminary Construction Costs per Segment “B”

B. MASSACHUSETTS AVE. - SAN PASQUAL

SITE PREPARATION	QTY	UNIT	PRICE	TOTAL
Tree removals				
Washingtonia palms	1	EA	\$1,200.00	\$1,200
Canopy trees (quantity approximate)	3	EA	\$600.00	\$1,800
Clear & grub	0	SF	\$0.75	\$0
Finish grading	24,800	SF	\$0.20	\$4,960
Soil Amendment	4,800	SF	\$0.50	\$2,400
Demolition & removal of concrete pavement	1,800	SF	\$2.00	\$3,600
Demolition & removal of asphalt paving	17,500	SF	\$2.00	\$35,000
Demolition & removal of vehicular curb & gutter	450	LF	\$3.50	\$1,575
Demolition & removal of fire hydrant	2	EA	\$500.00	\$1,000
Culvert relocation	1	LS	\$2,500.00	\$2,500
<b>SUBTOTAL</b>				<b>\$54,035</b>
CONSTRUCTION	QTY	UNIT	PRICE	TOTAL
Concrete 4" thick	2,250	SF	\$8.00	\$18,000
Concrete curb ramps	2	EA	\$2,500.00	\$5,000
Asphalt multi-use trail - 4" depth	4,800	SF	\$4.00	\$19,200
Decomposed granite 4" thick stabilized path w/ edging	2,700	SF	\$4.00	\$10,800
Bike & lane striping	450	LF	\$2.00	\$900
Bark mulch surfacing w/ edging - at bouldering area	1,800	SF	\$4.00	\$7,200
Skate park	7,000	SF	\$50.00	\$350,000
Gateway structures	2	EA	\$10,000.00	\$20,000
Retaining curb/wall	350	LF	\$30.00	\$10,500
Sedimentary-themed art wall	3,500	SF	\$35.00	\$122,500
Bouldering structures	1	EA	\$15,000.00	\$15,000
Boulder-themed bench	1	LS	\$2,500.00	\$2,500
Bus shelter	1	EA	\$20,000.00	\$20,000
Signs				
Interpretive signs	1	EA	\$1,000.00	\$1,000
Street signs	1	EA	\$250.00	\$250
Bike signs	3	EA	\$250.00	\$750
Site Furniture				
Water fountain - outdoor bi-level ADA pedestal	1	EA	\$8,000.00	\$8,000
Trash/Recycle receptacles	2	EA	\$750.00	\$1,500
Bike rack	1	EA	\$500.00	\$500
Bike bollards	6	EA	\$400.00	\$2,400
Lighting	450	LF	\$50.00	\$22,500
<b>SUBTOTAL</b>				<b>\$638,500</b>
PLANTING	QTY	UNIT	PRICE	TOTAL
Trees				
Accent Trees - 24" Box	6	EA	\$300.00	\$1,800
Canopy Trees - 24" Box	5	EA	\$250.00	\$1,250
Shrubs (40% 5 GAL. @ 36" O.C. 60% 1 GAL. @ 24" O.C.)	2,400	SF	\$1.75	\$4,200
Shredded Mulch - 3" deep in shrub areas	2,400	SF	\$0.30	\$720
Silva Cells and tree grates and sub-surface drainage	1,000	SF	\$30.00	\$30,000
Irrigation				
Tree Flood Bubblers	11	EA	\$50.00	\$550
Shrub Spider Spray Bubblers	2,400	SF	\$2.00	\$4,800
Groundcover Overhead Spray	2,400	SF	\$1.75	\$4,200
<b>SUBTOTAL</b>				<b>\$47,520</b>
ACQUISITION, SOFT COSTS, & CONTINGENCIES	QTY	UNIT	PRICE	TOTAL
Conceptual design contingency	\$740,055	%	15%	\$111,008
Final design & engineering	\$740,055	%	10%	\$74,006
Environmental review & permits	\$740,055	%	5%	\$37,003
Construction management	\$740,055	%	5%	\$37,003
Insurance & performance bonds	\$740,055	%	2%	\$14,801
Union Pacific Railroad property purchase	7,600	SF	\$2.30	\$17,480
<b>SUBTOTAL</b>				<b>\$291,300</b>
<b>GRAND TOTAL FOR STUDY AREA "B"</b>				<b>\$1,031,355.35</b>



Table 4. Preliminary Construction Costs per Segment “C”

C. SAN PASQUAL - MAIN STREET CUL-DE-SAC

SITE PREPARATION	QTY	UNIT	PRICE	TOTAL
Clear & grub	52,000	SF	\$0.75	\$39,000
Finish grading (Import)	52,000	SF	\$2.00	\$104,000
Soil Amendment	30,000	SF	\$0.50	\$15,000
Demolition & removal of wood fence	60	LF	\$21.00	\$1,260
Demolition & removal of asphalt paving	11,000	SF	\$2.00	\$22,000
<b>SUBTOTAL</b>				<b>\$181,260</b>
CONSTRUCTION	QTY	UNIT	PRICE	TOTAL
Concrete 4" thick	300	SF	\$8.00	\$2,400
Asphalt pavement - cul-de-sacs	6,000	SF	\$4.00	\$24,000
Asphalt multi-use trail - 4" depth	8,000	SF	\$4.00	\$32,000
Decomposed granite 4" thick stabilized path w/ edging	7,000	SF	\$4.00	\$28,000
Artificial turf - dog parks	8,000	SF	\$12.00	\$96,000
Dog park fence - 42" high tubular steel	500	LF	\$50.00	\$25,000
Pedestrian footbridge	200	SF	\$200.00	\$40,000
Bike & lane striping	900	LF	\$2.00	\$1,800
Gateway structures	2	EA	\$10,000.00	\$20,000
Site Furniture				
Doggie toys	8	EA	\$1,500.00	\$12,000
Benches	6	EA	\$1,500.00	\$9,000
Trash/Recycle receptacles	6	EA	\$750.00	\$4,500
Bike bollards	6	EA	\$400.00	\$2,400
Lighting	900	LF	\$50.00	\$45,000
<b>SUBTOTAL</b>				<b>\$342,100</b>
PLANTING	QTY	UNIT	PRICE	TOTAL
Trees				
Accent Trees - 24" Box	21	EA	\$300.00	\$6,300
Street Trees - 24" Box	3	EA	\$275.00	\$825
Canopy Trees - 24" Box	34	EA	\$250.00	\$8,500
Shrubs (40% 5 GAL. @ 36" O.C. 60% 1 GAL. @ 24" O.C.)	15,000	SF	\$1.75	\$26,250
Shredded Mulch - 3" deep in shrub areas	15,000	SF	\$0.30	\$4,500
Bioretention areas with 12" PVC drain pipe & outlet structure	3,100	SF	\$30.75	\$95,325
Irrigation				
Tree Flood Bubblers	58	EA	\$50.00	\$2,900
Shrub Spider Spray Bubblers	15,000	SF	\$2.00	\$30,000
Groundcover Overhead Spray	15,000	SF	\$1.75	\$26,250
<b>SUBTOTAL</b>				<b>\$200,850</b>
ACQUISITION, SOFT COSTS, & CONTINGENCIES	QTY	UNIT	PRICE	TOTAL
Conceptual design contingency	\$724,210	%	15%	\$108,632
Final design & engineering	\$724,210	%	10%	\$72,421
Environmental review & permits	\$724,210	%	5%	\$36,211
Construction management	\$724,210	%	5%	\$36,211
Insurance & performance bonds	\$724,210	%	2%	\$14,484
Union Pacific Railroad property purchase	17,000	SF	\$2.30	\$39,100
<b>SUBTOTAL</b>				<b>\$307,058</b>
<b>GRAND TOTAL FOR STUDY AREA "C"</b>				<b>\$1,031,268</b>

Table 5. Preliminary Construction Costs per Segment “D”

D. MAIN STREET CUL-DE-SAC - MT. VERNON

SITE PREPARATION	QTY	UNIT	PRICE	TOTAL
Tree removals				
Washingtonia palms	5	EA	\$1,200.00	\$6,000
Clear & grub	74,500	SF	\$0.75	\$55,875
Creek stabilization & regrading	1,200	LF	\$75.00	\$90,000
Finish grading	74,500	SF	\$0.50	\$37,250
Soil amendment	45,000	SF	\$0.50	\$22,500
Demolition & removal of asphalt pavement - road narrowing	3,500	SF	\$2.00	\$7,000
<b>SUBTOTAL</b>				<b>\$218,625</b>
CONSTRUCTION	QTY	UNIT	PRICE	TOTAL
Concrete 4" thick	1,500	SF	\$8.00	\$12,000
Concrete curb ramps	2	EA	\$2,500.00	\$5,000
Asphalt pavement - parking areas	4,500	SF	\$4.00	\$18,000
Decomposed granite 4" thick stabilized path w/ edging	10,200	SF	\$4.00	\$40,800
Pedestrian footbridge	250	SF	\$200.00	\$50,000
Striping				
Crosswalks	1	EA	\$500.00	\$500
Bike & lane striping	1,800	LF	\$2.00	\$3,600
Tot-Lot playground (300 SQ. FT.)	1	LS	\$50,000.00	\$50,000
Balance & agility course (3000 SQ. FT.)	1	LS	\$50,000.00	\$50,000
Children's adventure course/sand lot (1400 SQ. FT.)	1	LS	\$50,000.00	\$50,000
Net climb course	1	LS	\$15,000.00	\$15,000
Rope climb course	1	LS	\$15,000.00	\$15,000
Parcourse stations	4	EA	\$1,500.00	\$6,000
Shade structure	1	EA	\$15,000.00	\$15,000
Seat walls	70	LF	\$50.00	\$3,500
Boulders (quantity approximate)	50	EA	\$120.00	\$6,000
Interpretive signs	1	EA	\$1,000.00	\$1,000
Site furniture				
Benches	2	EA	\$1,500.00	\$3,000
Wood bollards (quantity approximate)	100	EA	\$100.00	\$10,000
Picnic tables	6	EA	\$2,000.00	\$12,000
Trash/Recycle receptacles	2	EA	\$750.00	\$1,500
BBQ units	2	EA	\$500.00	\$1,000
BBQ coal bins	2	EA	\$500.00	\$1,000
<b>SUBTOTAL</b>				<b>\$369,900</b>
PLANTING	QTY	UNIT	PRICE	TOTAL
Trees				
Accent Trees - 24" Box	12	EA	\$300.00	\$3,600
Street Trees - 24" Box	34	EA	\$275.00	\$9,350
Canopy Trees - 24" Box	59	EA	\$250.00	\$14,750
Shrubs (40% 5 GAL. @ 36" O.C. 60% 1 GAL. @ 24" O.C.)	22,500	SF	\$1.75	\$39,375
Shredded Mulch - 3" deep in shrub areas	22,500	SF	\$1.75	\$39,375
Turf - sod in picnic area	2,800	SF	\$1.50	\$4,200
Bioretention areas with 12" PVC drain pipe & outlet structure	6,610	SF	\$27.50	\$181,775
Irrigation				
Tree Flood Bubblers	105	EA	\$50.00	\$5,250
Shrub Spider Spray Bubblers	37,250	SF	\$2.25	\$83,813
Lawn Area Overhead Spray	2,800	SF	\$2.00	\$5,600
Groundcover Overhead Spray	37,250	SF	\$2.00	\$74,500
<b>SUBTOTAL</b>				<b>\$461,588</b>
ACQUISITION, SOFT COSTS, & CONTINGENCIES	QTY	UNIT	PRICE	TOTAL
Conceptual design contingency	\$1,050,113	%	15%	\$157,517
Final design & engineering	\$1,050,113	%	10%	\$105,011
Environmental review & permits	\$1,050,113	%	5%	\$52,506
Construction management	\$1,050,113	%	5%	\$52,506
Insurance & performance bonds	\$1,050,113	%	2%	\$21,002
Union Pacific Railroad property purchase	20,200	SF	\$2.30	\$46,460
<b>SUBTOTAL</b>				<b>\$435,002</b>
<b>GRAND TOTAL FOR STUDY AREA "D"</b>				<b>\$1,485,114</b>



Table 6. Preliminary Construction Costs per Segment “E”

E. MT. VERNON - SAN MIGUEL

SITE PREPARATION	QTY	UNIT	PRICE	TOTAL
Tree removals				
Palms	5	EA	\$1,200.00	\$6,000
Canopy trees	5	EA	\$600.00	\$3,000
Clear & grub	67,000	SF	\$0.75	\$50,250
Creek stabilization & regrading	450	LF	\$75.00	\$33,750
Finish grading	67,000	SF	\$0.50	\$33,500
Retaining Walls	400	SF	\$50.00	\$20,000
Soil amendment	42,000	SF	\$0.50	\$21,000
Demolition & removal of asphalt pavement - @ street	16,000	SF	\$2.00	\$32,000
Demolition & relocation of metal MTS fence	400	LF	\$23.50	\$9,400
<b>SUBTOTAL</b>				<b>\$208,900</b>
CONSTRUCTION	QTY	UNIT	PRICE	TOTAL
Concrete 4" thick	4,000	SF	\$8.00	\$32,000
Concrete curb ramps	2	EA	\$2,500.00	\$5,000
Asphalt multi-use trail - 4" depth	7,200	SF	\$4.00	\$28,800
Decomposed granite 4" thick stabilized path w/ edging	10,500	SF	\$4.00	\$42,000
Pedestrian footbridge	50	LF	\$200.00	\$10,000
Raised Crosswalk	1,500	SF	\$5.00	\$7,500
Special signal (HAWK or RRFB) with actuators	1	EA	\$50,000.00	\$50,000
Striping				
Crosswalks	3	EA	\$500.00	\$1,500
Bike & lane striping	1,400	LF	\$2.00	\$2,800
Kumeyaay-themed play space (1600 SQ. FT.)	1	LS	\$35,000.00	\$35,000
Community garden (1000 SQ. FT.)	1	LS	\$10,000.00	\$10,000
Parcourse stations	3	EA	\$1,500.00	\$4,500
Median refuge islands (800 SQ. FT.)	1	LS	\$5,000.00	\$5,000
Gateway structures	2	EA	\$10,000.00	\$20,000
Art pieces	3	EA	\$2,000.00	\$6,000
Boulders (quantity approximate)	50	EA	\$120.00	\$6,000
Interpretive signs	7	EA	\$1,000.00	\$7,000
Site Furniture				
Benches	3	EA	\$1,500.00	\$4,500
Trash/Recycle receptacles	3	EA	\$750.00	\$2,250
Bike bollards	6	EA	\$400.00	\$2,400
Play equipment	3	EA	\$5,000.00	\$15,000
Lighting	700	LF	\$50.00	\$35,000
<b>SUBTOTAL</b>				<b>\$332,250</b>
PLANTING	QTY	UNIT	PRICE	TOTAL
Trees				
Accent Trees - 24" Box	14	EA	\$300.00	\$4,200
Street Trees - 24" Box	13	EA	\$275.00	\$3,575
Canopy Trees - 24" Box	45	EA	\$250.00	\$11,250
Shrubs (40% 5 GAL. @ 36" O.C. 60% 1 GAL. @ 24" O.C.)	21,000	SF	\$1.75	\$36,750
Shredded Mulch - 3" deep in shrub areas	21,000	SF	\$0.30	\$6,300
Bioretention areas with 12" PVC drain pipe & outlet structure	1,690	SF	\$31.00	\$52,390
Irrigation				
Tree Flood Bubblers	72	EA	\$50.00	\$3,600
Shrub Spider Spray Bubblers	21,000	SF	\$2.00	\$42,000
Groundcover Overhead Spray	21,000	SF	\$1.75	\$36,750
<b>SUBTOTAL</b>				<b>\$196,815</b>
ACQUISITION, SOFT COSTS, & CONTINGENCIES	QTY	UNIT	PRICE	TOTAL
Conceptual design contingency	\$737,965	%	15%	\$110,695
Final design & engineering	\$737,965	%	10%	\$73,797
Environmental review & permits	\$737,965	%	5%	\$36,898
Construction management	\$737,965	%	5%	\$36,898
Insurance & performance bonds	\$737,965	%	2%	\$14,759
<b>SUBTOTAL</b>				<b>\$273,047</b>
<b>GRAND TOTAL FOR STUDY AREA "E"</b>				<b>\$1,011,012</b>

Table 7. Preliminary Construction Costs per Segment “F”

F. SAN MIGUEL - CENTRAL

SITE PREPARATION	QTY	UNIT	PRICE	TOTAL
Clear & grub	39,500	SF	\$0.75	\$29,625
Finish grading	56,000	SF	\$0.20	\$11,200
Retaining Walls	175	SF	\$50.00	\$8,750
Soil amendment	26,500	SF	\$0.50	\$13,250
Demolition & removal of asphalt pavement - @ street	17,500	SF	\$2.00	\$35,000
<b>SUBTOTAL</b>				<b>\$97,825</b>
CONSTRUCTION	QTY	UNIT	PRICE	TOTAL
Concrete 4" thick	3,000	SF	\$8.00	\$24,000
Concrete curb ramps	5	EA	\$2,500.00	\$12,500
Asphalt paving - street & parking areas	9,250	SF	\$4.00	\$37,000
Asphalt multi-use trail - 4" depth	8,500	SF	\$4.00	\$34,000
Decomposed granite 4" thick stabilized path w/ edging	7,800	SF	\$4.00	\$31,200
Special signal (HAWK or RRFB) with actuators	1	EA	\$50,000.00	\$50,000
Striping				
Crosswalks	4	EA	\$500.00	\$2,000
Bike & lane striping	1,500	LF	\$2.00	\$3,000
Crosswalk bulb-out	1	EA	\$15,000.00	\$15,000
Interpretive Spanish-era garden (1600 SQ. FT.)	1	LS	\$35,000.00	\$35,000
Viewing deck (500 SQ. FT.)	1	LS	\$15,000.00	\$15,000
Gateway structures	2	EA	\$10,000.00	\$20,000
Interpretive signs	4	EA	\$1,000.00	\$4,000
Community advertisement sign	2	EA	\$1,500.00	\$3,000
Site Furniture				
Benches	4	EA	\$1,500.00	\$6,000
Trash/Recycle receptacles	4	EA	\$750.00	\$3,000
Bike bollards	6	EA	\$400.00	\$2,400
Lighting	800	LF	\$50.00	\$40,000
<b>SUBTOTAL</b>				<b>\$337,100</b>
PLANTING	QTY	UNIT	PRICE	TOTAL
Trees				
Accent Trees - 24" Box	5	EA	\$300.00	\$1,500
Street Trees - 24" Box	29	EA	\$275.00	\$7,975
Canopy Trees - 24" Box	15	EA	\$250.00	\$3,750
Shrubs (40% 5 GAL. @ 36" O.C. 60% 1 GAL. @ 24" O.C.)	13,250	SF	\$1.75	\$23,188
Shredded Mulch - 3" deep in shrub areas	13,250	SF	\$0.30	\$3,975
Bioretention areas with 12" PVC drain pipe & outlet structure	4,580	SF	\$29.00	\$132,820
Irrigation				
Tree Flood Bubblers	49	EA	\$50.00	\$2,450
Shrub Spider Spray Bubblers	13,250	SF	\$2.00	\$26,500
Groundcover Overhead Spray	13,250	SF	\$1.75	\$23,188
<b>SUBTOTAL</b>				<b>\$202,158</b>
ACQUISITION, SOFT COSTS, & CONTINGENCIES	QTY	UNIT	PRICE	TOTAL
Conceptual design contingency	\$637,083	%	15%	\$95,562
Final design & engineering	\$637,083	%	10%	\$63,708
Environmental review & permits	\$637,083	%	5%	\$31,854
Construction management	\$637,083	%	5%	\$31,854
Insurance & performance bonds	\$637,083	%	2%	\$12,742
<b>SUBTOTAL</b>				<b>\$235,721</b>
<b>GRAND TOTAL FOR STUDY AREA "F"</b>				<b>\$872,803</b>



Table 8. Preliminary Construction Costs per Segment “G”

G. CENTRAL - BROADWAY

	QTY	UNIT	PRICE	TOTAL
SITE PREPARATION				
Tree removals				
Palms	3	EA	\$1,200.00	\$3,600
Canopy trees	2	EA	\$600.00	\$1,200
Clear & grub	17,500	SF	\$0.75	\$13,125
Finish grading	55,400	SF	\$0.20	\$11,080
Soil amendment	31,700	SF	\$0.50	\$15,850
Demolition & removal of asphalt pavement - at street	25,000	SF	\$2.00	\$50,000
Demolition & removal of concrete walkways/plazas	10,000	SF	\$2.00	\$20,000
Demolition & removal of wood fence - at police station	300	LF	\$21.00	\$6,300
Demolition & removal of metal fence - at trolley tracks	900	LF	\$23.50	\$21,150
Demolition & removal of metal fence - at Big Lemon	100	LF	\$23.50	\$2,350
Relocate Big Lemon	1	LS	\$15,000.00	\$15,000
Demolition & removal of bus shelter	1	LS	\$5,000.00	\$5,000
Demolition & removal of planted parking lot islands	2	LS	\$1,000.00	\$2,000
SUBTOTAL				\$166,655
CONSTRUCTION				
	QTY	UNIT	PRICE	TOTAL
Concrete 4" thick	19,500	SF	\$8.00	\$156,000
Concrete curb ramps	9	EA	\$2,500.00	\$22,500
Decomposed granite 4" thick stabilized path w/ edging	4,200	SF	\$4.00	\$16,800
Striping				
Crosswalks	6	EA	\$500.00	\$3,000
Bike & lane striping	1,300	LF	\$2.00	\$2,600
Big Lemon plaza arbor structure	1	LS	\$20,000.00	\$20,000
Tot-lot playground (800 SQ. FT.)	1	LS	\$19,500.00	\$19,500
Crosswalk bulb-outs	5	EA	\$15,000.00	\$75,000
Trellis & gateway structure	1	LS	\$10,000.00	\$10,000
Chainlink fence - at trolley tracks	900	LF	\$25.00	\$22,500
Wood fence - at police parking lot	300	LF	\$30.00	\$9,000
Bus shelter	1	EA	\$20,000.00	\$20,000
Bike rental station	1	EA	\$50,000.00	\$50,000
Art pieces	3	EA	\$2,000.00	\$6,000
Agriculturally themed art pieces	3	EA	\$2,000.00	\$6,000
Interpretive signs	6	EA	\$1,000.00	\$6,000
Site Furniture				
Benches	6	EA	\$1,500.00	\$9,000
Trash/Recycle receptacles	6	EA	\$750.00	\$4,500
Bike bollards	3	EA	\$400.00	\$1,200
Tree grates	9	EA	\$500.00	\$4,500
Lighting	200	LF	\$50.00	\$10,000
SUBTOTAL				\$474,100
PLANTING				
	QTY	UNIT	PRICE	TOTAL
Trees				
Accent Trees - 24" Box	45	EA	\$300.00	13,500
Street Trees - 24" Box	39	EA	\$275.00	10,725
Canopy Trees - 24" Box	23	EA	\$250.00	5,750
Shrubs (40% 5 GAL. @ 36" O.C. 60% 1 GAL. @ 24" O.C.)	31,700	SF	\$1.75	55,475
Shredded Mulch - 3" deep in shrub areas	31,700	SF	\$0.30	9,510
Bioretention areas with 12" PVC drain pipe & outlet structure	14,010	SF	\$25.75	\$360,758
Irrigation				
Tree Flood Bubblers	107	EA	\$50.00	\$5,350
Shrub Spider Spray Bubblers	15,850	SF	\$2.00	\$31,700
Groundcover Overhead Spray	15,850	SF	\$1.75	\$27,738
SUBTOTAL				\$520,505
ACQUISITION, SOFT COSTS, & CONTINGENCIES				
	QTY	UNIT	PRICE	TOTAL
Conceptual design contingency	\$1,161,260	%	15%	\$174,189
Final design & engineering	\$1,161,260	%	10%	\$116,126
Environmental review & permits	\$1,161,260	%	5%	\$58,063
Construction management	\$1,161,260	%	5%	\$58,063
Insurance & performance bonds	\$1,161,260	%	2%	\$23,225
Union Pacific Railroad property purchase	18,000	SF	\$2.30	\$41,400
SUBTOTAL				\$471,066
GRAND TOTAL FOR STUDY AREA "G"				\$1,632,326



# 9 | Preliminary Cost Estimates

## 9.3 Preliminary Maintenance Costs

Based on the preceding preliminary cost estimates and the 30% design drawings, a rough maintenance cost estimate was created. As with the other cost estimates, this maintenance cost estimate is very preliminary and should be verified and recalculated once 100% construction drawings have been completed. Costs may vary depending on the competitive bid process for the maintenance contracts. These maintenance costs do not include formal biological maintenance and monitoring costs since no CEQA based impacts have been identified. Standard landscape maintenance and replacement costs are included.

Table 9. Preliminary Maintenance Costs

		Receptacles emptying	Litter removal	Irrigation inspection	Irrigation adjustment	Tree trimming	Shrub trimming	Tree / shrub pest control	Graffiti removal	Light replacement	Power washing	Restriping / slurry seal	DG recompaction	Artificial Turf Care	Total Unit Costs
Typical frequency per year		50	12	6	3	1	1	1	6	1	1	0.25	1	12	\$95.25
Unit cost per activity per 1,000 sf		\$1.00	\$1.00	\$0.50	\$2.00	\$3.00	\$2.50	\$10.00	\$5.00	\$5.00	\$10.00	\$15.00	\$5.00	\$4.00	\$64.00
Annual cost per 1,000 sf		\$50	\$12	\$3	\$6	\$3	\$3	\$10	\$30	\$5	\$10	\$4	\$5	\$48	\$188
Annual cost per sf		\$0.05	\$0.01	\$0.00	\$0.01	\$0.01	\$0.01	\$0.10	\$0.15	\$0.03	\$0.10	\$0.06	\$0.03	\$0.19	\$1
Annual cost per acre		\$2,178	\$523	\$65	\$523	\$392	\$272	\$4,356	\$6,534	\$1,089	\$4,356	\$2,450	\$1,089	\$8,364	\$32,191
	Area SF	Total Costs													
1) Roadways, parking, concrete walkways/plazas	53,000	\$0.01								\$0.10	\$0.06			\$0.17	\$8,917
2) Asphalt multi-use trails	67,000	\$0.01						\$0.15	\$0.03		\$0.06			\$0.24	\$16,298
3) DG trails/spaces	62,500	\$0.01							\$0.03			\$0.03		\$0.06	\$3,875
4) Dog parks/artificial turf areas, & picnicking areas	12,000	\$0.05	\$0.01						\$0.03			\$0.03	\$0.19	\$0.30	\$3,648
5) Adventure / exercise areas, playgrounds, tot-lots	11,500	\$0.05	\$0.01					\$0.15	\$0.03					\$0.24	\$2,726
6) Skatepark	7,000	\$0.05	\$0.01					\$0.15	\$0.03	\$0.10				\$0.34	\$2,359
7) Community gardens	2,500	\$0.05	\$0.01	\$0.00	\$0.01		\$0.10	\$0.15	\$0.03			\$0.03		\$0.38	\$939
8) General park trees & shrubs	320,000		\$0.00	\$0.01	\$0.01	\$0.01	\$0.10							\$0.13	\$41,200
9) Native slopes & restored creek	100,000		\$0.00	\$0.01	\$0.01	\$0.01	\$0.10							\$0.13	\$12,875
Total SF	635,500	\$92,836													
Total acres	14.59	Anticipated Total Annual Maintenance Cost \$92,836													



## 10.1 Consultant Recommendations

A conceptual study and 30% public improvement plan set does not fully answer all technical issues and engineering requirements. However, the concept plans, design themes, phasing, construction costs, public improvement plan set and the environmental review documents provide for a great overview and summary of the proposed project. This document has enough detail for the public to understand its intent, it has enough vision for people to get excited about and it has had enough vetting of these ideas to gauge initial public support or opposition. With the goals and specific recommendations available, the City of Lemon Grove should be able to submit this plan and its work products, to a variety of agencies that accept applications for grants that can help to pay for the construction of this project. Healthy communities, healthy lifestyles, active transportation, access to transit, smart growth support, first mile and last mile to transit, ADA improvements, water quality improvements, resource enhancements and Transit Oriented Development grant programs are all possible and should be explored.

The plans are also far enough along to require adjacent discretionary projects or for capital public works projects, to help in implementing the plans. For any project that can be shown to have a nexus in impacting park and recreation facilities, public safety or transportation improvement and contributions, then these discretionary projects could be asked to help to contribute to their fair share of the project components.

As stated before in this document, the project represents a unique opportunity for creating a safe and high quality change in the environment that will increase the quality of life, health and economic value of the community. Many agencies understand the need for improved health, increased access to nature, improved water quality and a continuing mode share change from pure automobile use to combinations of walking, biking and transit use. All of these elements can help provide the City of Lemon Grove with access to regional, state and federal grants. In addition, public

investment in these types of facilities, tend to increase the value and property tax basis of the adjacent community and they tend to help induce additional private development investment in the community. Although the project has provided a good leap into vision and plans, details will still need to be worked out. Some of these details and challenges will include:

1) Determining if agreements with Union Pacific can be worked out in a mutually beneficial manner in order for the City and the public to take advantage of linear open space that could handle additional park related amenities. If this agreement can not be reached, then adjustments to the current concept plan will need to be made. It is not expected that these changes will be that dramatic and it is also not expected for a lack of agreement to make any part of the trail system infeasible. Additional Memorandums of Understanding will be required with MTS, Union Pacific, Utility providers and resource agencies.

2) The north end of the study area represents a great opportunity for creating additional public realm space that will also help to create a sense of community identity. However, the long term benefits of this space will require relocation of transit stops as well as some adjustments to local circulation. What attracts people to places is not parking lots and roadways. It is spaces where activity occurs and where the interface between a land use and a street area can be activated for social interaction and retail activation. If the concern over every last parking lot and roadway capacity issue is put forward as the primary goal, then the benefits of this area to the community may be lost.

3) The street closures and partial closures will provide the community with many new amenities and linear park and open space assets. It will also provide a safe walking, running, strolling and biking location that the community will enjoy. However, a 1/2 block out of direction will be required for vehicular drivers to make. Emergency and maintenance access can be maintained in these areas. The current level of street use and the out of direction does not represent any

form of environmental impact or traffic impact. Safety could be improved. But if the community rallies behind protection all street surface routes and all parking, then these benefits could be lost.

4) The creek could be treated more as an asset than a liability. Invasives should be removed, plant material added that is appropriate for this natural environment and could result in improved aesthetics and water quality. However, final permits and coordination with resources agencies could make some of this improvement more difficult. If formal consultation is required and a formal replacement ratio of impacted wetlands are required, then some costs would go up and some human interaction with these spaces may go down. However, the corridor represents a great opportunity to provide mitigation banking, where other projects that need wetland mitigation could provide funds for restoring the habitat and biological nature of the creek.

5) Members participating in the development of the plan were not in full agreement regarding park or pathway lighting. The Sheriff's Department recommends that lighting be included to lower vandalism, while others believe that if an area is lighted, it will attract people at night, and that they may still do things that they should not. Other concerns were focused on potential light trespass for neighboring properties. Recent vandalism to the lighting fixtures at the existing promenade emphasize the need for more vandal-resistant lighting. Careful lighting design and fixture selection can address most design issues related to light trespass, but vandalism may be more difficult to solve. The public and the City Council may need to deliberate more on lighting concepts (street standards and pedestrian-level lighting) for the entire length of the park and provide direction for the project in the future.

6) The San Altos Court segment of the study area could be improved to lower crime, trespass, homeless encampments and trash dumping. However, the residents along this area may have concerns about

people behind their homes. The area is currently informally open for the public and the utility easement is likely to remain into the future. Rerouting trail users to the street would not provide the user experience desired. This will need to be worked through more.

7) It is not likely that all funding needed to complete the entire project is likely to be found easily. This will require some prioritization of elements or segments. In general, support exists for the inclusion of a continuous path for pedestrians and a route for biking, even if it is just a bike boulevard, bike route or bike lane. Stormwater requirements will need to be met as will other safety and ADA access requirements. Street trees and restoration priorities are also high. To a lesser degree, public art, gateways, wayfinding, interpretive panels, active park facilities and lighting may need to be adjusted to meet limitations on budgets. A completely stripped trail system with no amenities may not be acceptable to the users of the facility either. A balance is needed that is based on budget realities and the benefits or creating unique and pleasant places.

8) Decisions on walkway, path and multi-use trails should follow all minimum standards and look to provide ADA access. However, some decisions on widths above the minimums, the surface material of the path or trail and the design treatments of lighting, street furnishings and plant materials can all evolve over time as long as they are appropriate for the semi-natural setting, meet ADA requirements and are considered safe for users. Bikes, skateboards, strollers, wheelchairs and walkers with various abilities and mobility levels will need to be accommodated. Emergency access and maintenance vehicle loads (75,000 pounds), access control through bollards and widths will also need to be taken into account for any areas closed to normal vehicular traffic. Crosswalk design, pedestrian crossing devices, striping, stop controls and all regulatory signage will need to meet safety and the Manual on Uniform Traffic Control Devices.



# 11 | City Comments

## Public Improvement Plan Comment Statement

The project scope requires that the conceptual plans be taken to a level of 30% design and engineering. By definition, the 30% is a preliminary layout of the conceptual plans in an accurate layout using design and engineering principles that can assure a level of technical feasibility. A 30% design set should cover all potential elements in some level of detail that will form the basis of construction documents that can be bid as a public improvement plan set. The 30% should also include enough detail to be able to provide at least a conceptual level of probable construction costs. Generally the presence and location of features is known but the type of material and quality of the material may not be specified.

In many cases detailed engineering calculations and the application of formal standards would not be considered part of the 30% plan, nor would construction specification, construction details or detailed levels of design or engineering.

The City of Lemon Grove staff had provided 15% and 30% review of the public improvement plan sets. The contract scope required one level of review and adjustments. Since the 30% was also reviewed a second time, it is important for this study effort to document the comments that will still need to be addressed once a future phase of work is started. Generally, the 30% design is followed by a 60%, 95% and 100% level of full construction documents that allow it to be a publicly

circulated plan set available for bidding and permitting. The following pages summarize the comments received at the end of the project scope requirements that will need to be addressed or refined beyond what is in this package of 30% drawings. The comments have been summarized into one of several categories. Future efforts will need to address all of the following requirements.

Environmental mitigation measures identified within the Mitigated Negative Declaration ND16-05 shall be adhered to for the duration of the project and shall be considered prior to the preparation construction drawings where appropriate.

### 11.1 Construction-Related Comments (C)

**Comment C-1:** All driveway entrances adjacent to proposed paths shall be per San Diego Regional Standard Drawings. Show the curb, gutter, sidewalks and driveway aprons on the west side of Main St. where appropriate (reference sheets 9 and 10). Consider a rolled-curb for continuous sidewalk.

**Comment C-2:** Transitions to vehicle paths shall be bollard separated with pavement markings and signage that the street is used for pedestrians, bicycles, and vehicles. Multi-use path to vehicle travel lane transitions shall be through stained or colored asphalt or concrete and remain at the same level (no curb separation).

**Comment C-3:** Encourage crosswalks to be raised a minimum of six inches and be a minimum of six feet wide where curb to travel lane transitions are proposed.

**Comment C-4:** Assure proper driveway access to houses between San Pasqual and Beryl Streets. Show access for all houses adjacent to the cul-de-sacs (reference sheet 9).

**Comment C-5:** Add curb, gutter and sidewalk to the area south of Central and north of Burnell along the west side (reference sheet 13).

**Comment C-6:** Ensure appropriate pedestrian ramps and crosswalks are provided throughout (reference sheet 10). Consider colored and stamped and/or artistic crosswalks and transitions to match theme.

**Comment C-7:** Revisit the intersection geometry at Burnell, Mt. Vernon Street, and Buena Vista to ensure compliance with the County's street design manual. Please provide a detailed design solution (reference sheet 10).

**Comment C-8:** An easement for future maintenance will be needed (reference sheet 10, 11 and 13).

**Comment C-9:** The road profile needs to be drawn to match contours (reference sheet 11).

**Comment C-10:** The intersection should be refined to meet geometric design standards (reference sheet 12 and 13).

**Comment C-11:** The sidewalk width needs to be verified that it is adequate width (reference sheet 14).

**Comment C-12:** Pedestrian ramps need to be lined up better (reference sheet 14).

**Comment C-13:** Show the cross section with right-of-way striping (lane geometry) for sidewalk and median (reference sheet 15).

**Comment C-14:** Clearly label fire access (reference sheet 15).

**Comment C-15:** Fire access turnarounds and other safety specific criteria will need to be refined.

**Comment C-16:** Full irrigation/landscape plans will need to be developed.

**Comment C-17:** Ensure there is a consistent design standard used with cross walks throughout the project. Evaluate the use of raised cross walks where street volumes and speeds are lower.

**Comment C-18:** All DG paths need to be six feet wide with vertical clearance and be Title 24, ADA persons with disabilities accessible.

**Comment C-19:** Crosswalks shall be provided at all intersections. Bulb outs, pedestrian islands, and raised crosswalks shall be encouraged.

**Comment C-20:** Consider amending theme transitions to be at street intersections. Specifically, extend the Geologic Time Theme to Massachusetts Avenue. Gateways should be provided at transitions into each theme.

**Comment C-21:** The Kumeyaay Tribe shall be consulted prior to any themed improvements within this segment.



## 11.2 Furnishing-Related Comments (F)

**Comment F-1:** Add pet-waste dispenser stations.

**Comment F-2:** Add covered waste and recycling bins.

**Comment F-3:** Show all existing and proposed lighting. Ensure lighting is per City standards (reference sheet 4).

**Comment F-4:** Include signage throughout the park with environmental themes such as recycle, stormwater pollution prevention.

**Comment F-5:** Bollards shall be provided at all entry points to of the trail closed to vehicles. The bollards shall be removable for emergency vehicle access. Locks are permitted.

**Comment F-6:** The lighting fixture and illumination type and product should remain consistent in the corridor. LEED based or induction type lighting should be considered for energy conservation. Illumination color and intensity should also be consistent. This standardization is for replacement simplicity. The pole supports can vary according to time theme with variations allowed in color, materials and design.

**Comment F-7:** Lighting should focus on areas of the project where security and safety would benefit from lighting. In general, all intersections should maintain city standards for vehicular streets, especial where crosswalks are proposed. Areas of the park that have active uses, should provide adequate lighting levels to accommodate this use and to provide for monitoring.

Other portions of the trail should not include lighting unless determined by Council or staff action. Lighting guidance for the San Altos Court segments will require future direction.

**Comment F-8:** Standards for light source heights should concentrate on pedestrian level lighting at key locations along the corridor using a 8'-12' height. Low pedestrian lighting should only be placed at a 2' to 4' height using bollards at street closure or partial closure areas. Vehicular level lighting assuming a 12' to 24' height would be limited to intersections and cross walk areas. Where possible a combination of pedestrian and vehicular should be considered on the same pole system.

## 11.3 Construction Drawing Standards-Related Comments (S)

**Comment S-1:** Add standard construction notes from SDG&E on sheet 1.

**Comment S-2:** Include a note that the pavement and bridge segments along the multi-use path shall be suitable for skateboards and other wheeled modes of transportation.

**Comment S-3:** Provide conceptual landscape plans in compliance with Chapter 18.44 of the Lemon Grove Municipal Code.

**Comment S-4:** Verify that all existing easements are shown.

**Comment S-5:** The City of Lemon Grove's standard notes for plans will need to be added.

**Comment S-6:** Traffic control will need to be addressed during construction.

**Comment S-7:** Ongoing maintenance requirements will require that attention to plant selection, irrigation equipment, types of recreation equipment so that maintenance is minimized.

**Comment S-8:** Under Striping and Signing Note 7, determine the need for limit lines/stop lines, as thermoplastic versus paint.

**Comment S-9:** Label the two bus stop pull-out locations. Ensure the option portrayed aligns with the City Council's and City Manager's direction (reference sheet 15).

**Comment S-10:** Note pavement for emergency access vehicles shall have a minimum 75,000 lbs. load capacity.

**Comment S-11:** Note improvements within Union Pacific, SDA&E Railroad/MTS r/w, and within residential properties will require City acquisition, an encroachment, maintenance and removal agreement, easements, and/or a Memorandum of Understanding (MOU).



# 11 | City Comments

## 11.4 Utility-Related Comments (U)

**Comment U-1:** Show all utility poles, guy wires, support poles and overhead utility lines. Also show dry utilities.

**Comment U-2:** Consider coordination of the relocation of sewer lines during the 2016 City of Lemon Grove sewer upsizing project.

**Comment U-3:** Add all AT&T, Cox, SDG&E facilities to plans.

**Comment U-4:** Show easements for storm drain encroachments.

**Comment U-5:** No retaining walls shall be built on top of the sewers

**Comment U-6:** Note gas line depths and show cross sections at the skate and bike park to show future construction over the gas line, etc.

**Comment U-7:** How does the fire hydrant work with a 5' walkway(reference sheet 9)

**Comment U-8:** Sewer MH is in the bio basin (reference sheet 9).

**Comment U-9:** A sewer upsizing project is to commence this year. Existing 8" and 10" sewer mains will be up-sized to 12"

**Comment U-10:** On Section C-C, note the existing 10" water line between Massachusetts and San Pasqual St. is to be abandoned by Helix (reference sheet 3 and various sheets).

**Comment U-11:** Helix will relocate fire hydrant (reference sheet 7)

**Comment U-12:** In reference to the trail profile, an additional 4' of cover over the water main is too much, making the water main 8' deep. Please consider 2' of fill in lieu of 4'.

**Comment U-13:** Sheet 5 to Sheet 6: STA 7+40 - STA 23+60 from this station in the Improvement plans there will be a cut of at least 6" to 2 feet. This will impact SDG&E's existing 16" high pressure gas line, which is to have a minimum cover of 36". If grade cannot be adjusted, the pipe will need to be relocated. Since the pipeline was installed within an easement, relocation expenses will be on the City of Lemon Grove.

**Comment U-14:** Sheet 7: Bio-filtration will be in conflict with the existing 16" HP gas main. A solution may be to move the bio-filtration to the Educational/recreational area, northeast of Massachusetts and Main St.

**Comment U-15:** Sheet 8: Conflict with bridge over sewer line

**Comment U-16:** Sheet 9:

- STA 25+00-27+00: Bio Filtration will be in conflict with the existing 16" HP gas main.
- STA 33+00: Existing gas main that crosses Beryl St from Main St. will be in conflict with the proposed Bio-filtration.

**Comment U-17:** Sheet 11:

- Proposed bio-filtration too close to the existing 16" HP gas main.
- STA 47+80 - STA 48+00: Proposed bio-filtration too close to the existing 16" HP gas main.

**Comment U-18:** Sheet 14:

- STA 72+50-STA 73+20: Proposed bio-filtration will be in conflict with the existing gas main.
- STA 78+30-STA 79+60: Proposed bio-filtration will be in conflict with the existing EUG.
- STA 81+20 and STA 81+50: Proposed bio-filtration will be in conflict with the existing electric underground facilities that cross Main St.

**Comment U-19:** Show new SDG&E vault location (reference sheet 7).

**Comment U-20:** Please provide irrigation/landscape plans for review.

**Comment U-21:** Are there any proposed irrigation services? If so, where and what is the size of the meter?

**Comment U-22:** On Section D-D on sheet 3, is this added fill below the DG path? If so, how deep and long is the fill?

**Comment U-23:** In reference to sheet 7, Helix will abandon the 10" ACP.

**Comment U-24:** On sheet 8, Helix will abandon 10" ACP from Massachusetts to San Pasqual.



## 11.5 Drainage-Related Comments (D)

**Comment D-1:** Provide more detail on how to restore the natural channel.

**Comment D-2:** Ensure all bio basins throughout the project are sized to meet the new permit requirements. Show flow lines to ensure they all work correctly.

**Comment D-3:** Identify where drainage will go (reference sheet 9).

**Comment D-4:** How is the water quality being addressed (reference sheet 11).

**Comment D-5:** Consider designs that connect runoff/sheet flow from nearby neighborhoods into bioretention areas for treatment.

**Comment D-6:** Consider creating additional water features that collect runoff.

**Comment D-7:** Consider reuse of runoff for irrigation of landscape.

**Comment D-8:** The typical bioretention detail on Sheet 3 needs to be made more consistent with the standard detail in the BMP Design Manual. The differences are:

- A 4", perforated PVC underdrain is proposed. The BMPDM standard is 6" slotted PVC pipe.
- 4" of surface ponding is proposed. The BMPDM states that the minimum surface ponding depth is 6".
- The vertical distance between the invert of the underdrain and the bottom of the class 2 permeable base layer is not stated on the plans. The BMPDM states that the distance should be a minimum of 3".

**Comment D-9:** Several of the bio filters appear to have a finish grade greater than 2% (e.g., the southern bio filter on Sheet 11). Include check dams or equivalent to ensure the finish grade within bio filters is less than or equal to 2%, as required by the BMPDM.

**Comment D-10:** Note F on the typical bio filtration BMP detail on Sheet 3 states that the catch basin should be installed such that top of grate is 4" above finish grade. Typically, about 3" of mulch is included in the landscape design for bioretention areas. If mulch is being provided, either show the mulch as another layer on the detail so that it is clear that the ponding depth is from the top of the mulch to the top of

grate, or reword Note F to clarify that the ponding depth is from top of grate to top of mulch.

**Comment D-11:** Please clarify why an impermeable liner on the sides and bottom is necessary for all of the bio filtration BMPs. Some of the bio filtration BMPs are placed close to slopes, where liners may be required for slope stability, but some of the bio filters are placed in flatter areas (e.g., in Sections 8-8 and 1-1) where full impermeable liners may not be required.

**Comment D-12:** Verify that only one 24" catch basin outlet is needed to convey high flows in the larger bio filters, in particular the bio filter on Sheet 4 (6,900 sf), the bio filter that spans Sheets 9 and 10 (3,800 sf), the bio filter that spans Sheets 13 and 14 (4,150 sf), and the bio filter on Sheet 15 (3,960 sf).

**Comment D-13:** Note 5 (multiple sheets) says "restore existing natural channel per landscape plan." Some of the areas that this note applies to do not appear to be natural in the existing condition. For example, the channel is concrete in the vicinity of Ramon Street (Sheet 6) specify that concrete removal would be required? Provide a hydraulic analysis confirming that concrete removal will not lead to erosion or flooding.

**Comment D-14:** Verify locations of storm drain lines on Sheet 7. The City's MS4 GIS layer shows that the storm drain line east of the trolley tracks comes back to the west side and joins with the open channel where the channel begins again just south of the main parking lot by the trolley station. The GIS file may not be correct as to the exact location, but the storm drain line east of the trolley tracks should come back to the west side and enter the main open channel at some point, and that connection is not shown on the plans.

**Comment D-15:** Ensure the proposed dog park on Sheet 8 is graded to drain to the adjacent bio filtration area and does not drain directly to the channel. The plans needs to clearly show drainage directly in this area, and section D-D does not indicate the location of the dog park.

**Comment D-16:** Note 9 refers to an O" curb detail on Sheet 3 with no detail.

**Comment D-17:** Section E-E on Sheet 3 appears to imply that the existing ditch/channel will be partially filled. That would appear to reduce the channel's cross section. If the channel cross section is going

to be reduced in this area, an analysis needs to be done to verify that the smaller cross section is able to provide adequate flood protection.

**Comment D-18:** Sheet 12 indicates channel restoration will occur, but section G-G, which crosses the channel segment marked for restoration, does not indicate that the channel will be restored in that area.

**Comment D-19:** If feasible within the proposed budget, consider expanding the footprint of the 400 sf bio filter shown on Sheet 13. It appears more space is available to the north, and a larger BMP could treat more runoff from Main St.

**Comment D-20:** Wherever 6" concrete curbs are proposed next to bio filters, curb cuts or equivalent should be provided to allow runoff to drain to the bio filters. This appears to apply to

- Bio filters on Sheet 15 (one of the three is also partially shown on Sheet 14) and the adjacent paved areas.
- The southern bio filters on Sheet 13.
- The two southerly (900 sf) bio filters on Sheet 7.

**Comment D-21:** Consider adding a cross section for Sheet 4, which has a bio filter and therefore is different than the area shown in Section A-A.

**Comment D-22:** Consider producing a table or exhibit that shows the size of the drainage area tributary to each bio filter. This would help with adjusting bio filter sizes for efficiency (e.g., if a small drainage area goes to a large bio filter, the size could be reduced or more area could be directed to drain to that bio filter, and vice versa). As an example, the bio filter on Sheet 4 is very large (6,900 sf), but the drainage area does not seem to be large enough to require a bio filter of that size.

**Comment D-23:** Where there is pervious area between the bio filter and adjacent DG trails or paved areas, vegetation to prevent erosion should be specified for that pervious area. Establishing vegetation to prevent erosion of the pervious area is important to reduce the sediment loading to the bio filters.



